AVIATION

The Oldest American Aeronautical Magazine

NOVEMBER 7, 1927 Issued Weekly PRICE 20 CENTS

The "Spirit of St. Louis" en route to New York and the end of a 22,350 mi. tour.

VOLUME XXIII

NUMBER 19

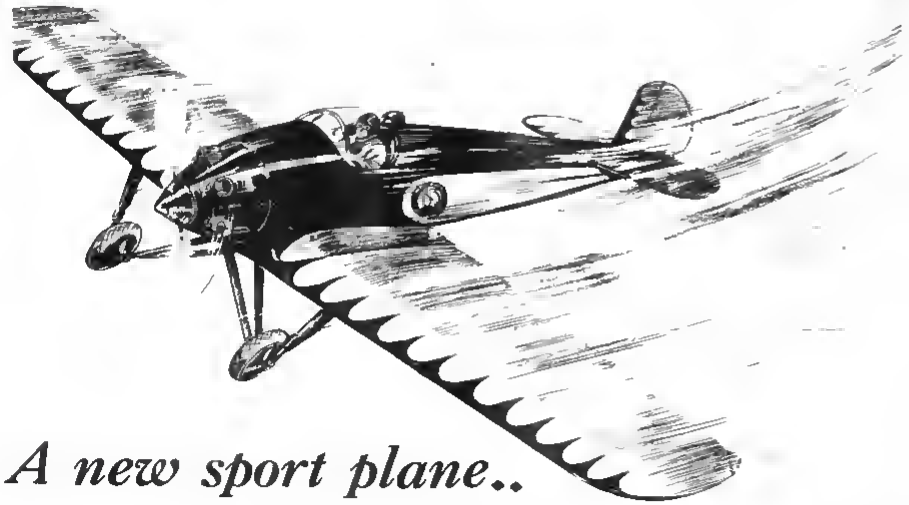
Special Features

San Francisco Airport
Conducting a Flying School
Fuel Tests on Fairchild Cam Engine

AVIATION PUBLISHING CORPORATION

250 WEST 57 STREET, NEW YORK

Publication Office, Highland, N. Y. Entered as Second-Class Matter, Nov. 22, 1920, at the Post Office, at Highland, N. Y. under Act of March 3, 1879.



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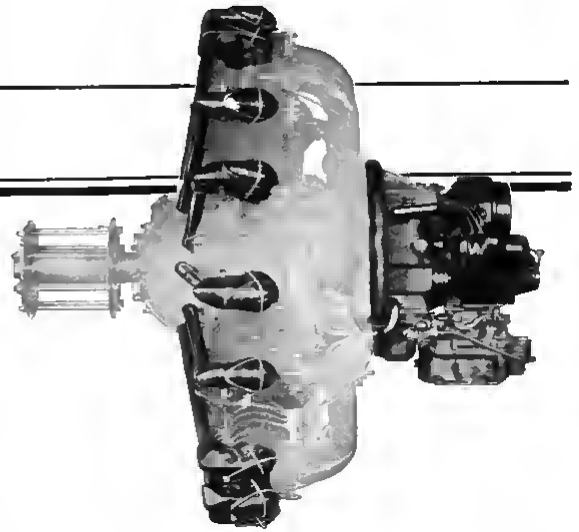

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Complete enclosure of all working parts

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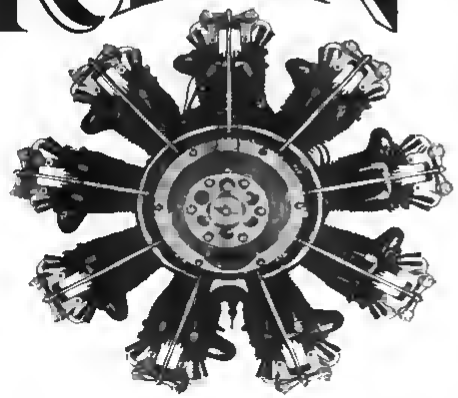

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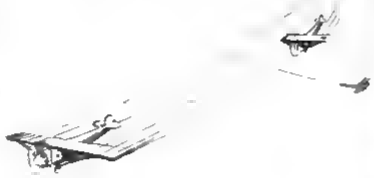

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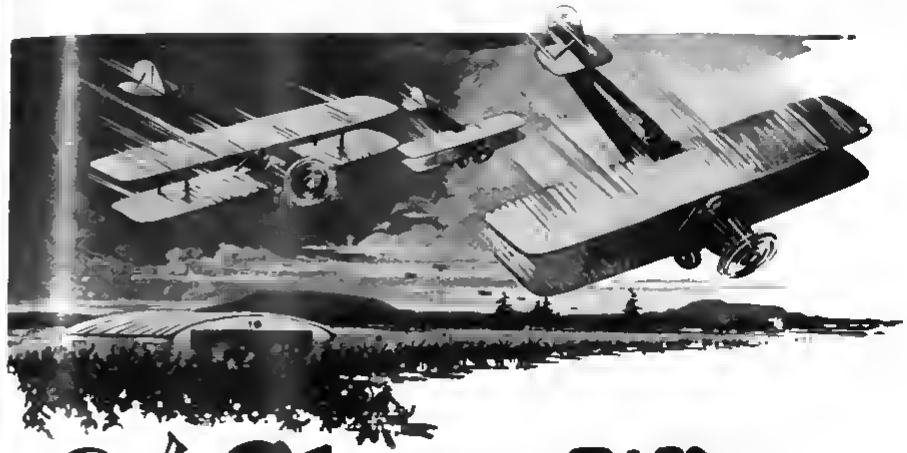

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THE NATIONAL GUARD UP-TO-DATE

The Curtiss O-11 "Falcon"

Time was when the National Guard was considered more or less as a "home-town outfit." Not particularly well equipped, — chiefly of value, perhaps, in local emergencies, strikes, riots.

Then came the World War — and these same National Guard units, in spite of the handicaps of insufficient training and equipment, blossomed overnight into first-class fighting units — writing their history on the battle-fields of France in glorious fashion.

Today the National Guard, efficiently organized, well trained, properly equipped, is an extremely important part of our scheme of national defense. And like all up-to-date military organizations it has taken to the air.

Deliveries are now being made on a quantity order of Curtiss O-11 "Falcons", built for exclusive use of the National Guard. The "Falcon" is the machine which is being supplied in large quantities as the standard two-seater observation and attack plane of the U. S. Army Air Corps.

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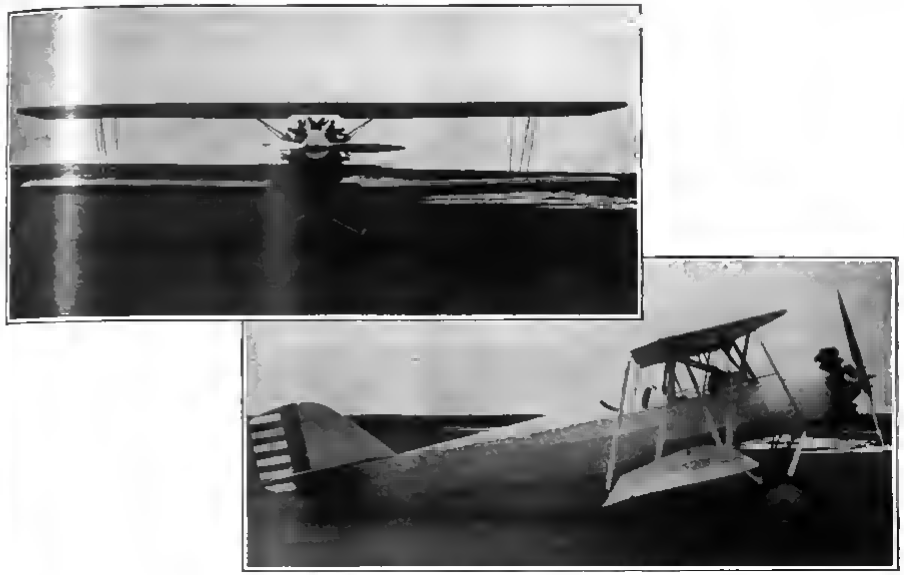

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Vol. XXIII *November 7, 1927* No. 19

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AVIATION PUBLISHING CORPORATION

Business and Editorial Offices

250 West 57th St., New York City

Cable Address, AEROENG

Publication Office: *Highland, New York*

Subscription price Four dollars per year Canada, five dollars Foreign, six dollars. Single current copies, twenty cents. Back numbers, 25 cents. Advertising rates on application. Issued every Monday Forms close ten days previously. Entered as second-class matter Nov. 22, 1920 at the Post Office at Highland, N. Y., under act of March 3, 1879

AVIATION

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Vol. XXIII NOVEMBER 7, 1927 No. 19

Teach Them to Spin

ALTHOUGH THE modern commercial plane which is used for student instruction is of a design and construction that makes it well nigh fool-proof in the air there is still a certain amount of danger attached to the possibility of the greenhorn solo pilot spinning to the floor. Not so much from the standpoint of the plane being so rigged that it won't come out of a spin as from the standpoint of the student not knowing HOW to take it out.

During the war when speed in training was the prime requisite rather than complete efficiency, there were innumerable cases where the student flier did not receive spinning instruction until after he had spent several solo hours in the air. And it was only through sheer luck that more of them did not fall into spins from which they never recovered.

But now the item of speed in getting the student on a solo basis should be the last consideration, and flying school instructors should make sure that their pupils know how to control a spin before they send them into the air alone. The majority of student pilots are now receiving little enough instruction as it is, and even if in some cases additional instruction has to be given at the company's expense such insurance against a washed out plane and pupil is well worth the effort and cost.

Looking Ahead

UNLESS THE United States wishes to lose its position in the forefront of aeronautical development, the government officials in charge of aeronautics and American sportsmen will have to consider immediately the possibility of designing entries to compete next year in the Schneider Trophy Contest to be held in England. A few years ago AVIATION predicted that no individual designer and manufacturer could hope to win the trophy when he was contesting with planes backed by the engineering and resources of a government. This has been demonstrated by the results of the last three years. So long as the Bureau of Aeronautics and the Air Corps backed the contestants with orders for new planes the United States won. When the Italian Air Force determined to win the trophy, it succeeded against the year old planes of the United States. This year the Air Ministry of Great Britain determined to wrest the speed laurels from Italy and through the expenditure of a large experimental fund has brought to England, in one effort, the premier records of the world.

Next year it is uncertain who will challenge. Italy will undoubtedly wish to retrieve some of its lost prestige. Every English participant expressed the hope that the United States would, by producing a new type, still further add to the speed possibilities of racing aircraft. As this is the first attempt made by Great Britain in several years to secure one of the major aeronautical records, the popular enthusiasm that has been aroused may change the recent trend and the British may seek to wrest other trophies from the present holders. The United States should have sportsmanship enough to wish to keep in the front rank of aeronautical development. The America Cup was defended by the New York Yacht Club ever since it was won at a cost to a group of members of several hundred thousand dollars for each race. If the government does not wish to participate an effort should be made to raise a fund to challenge for the trophy which now represents the aeronautical championship of the world.

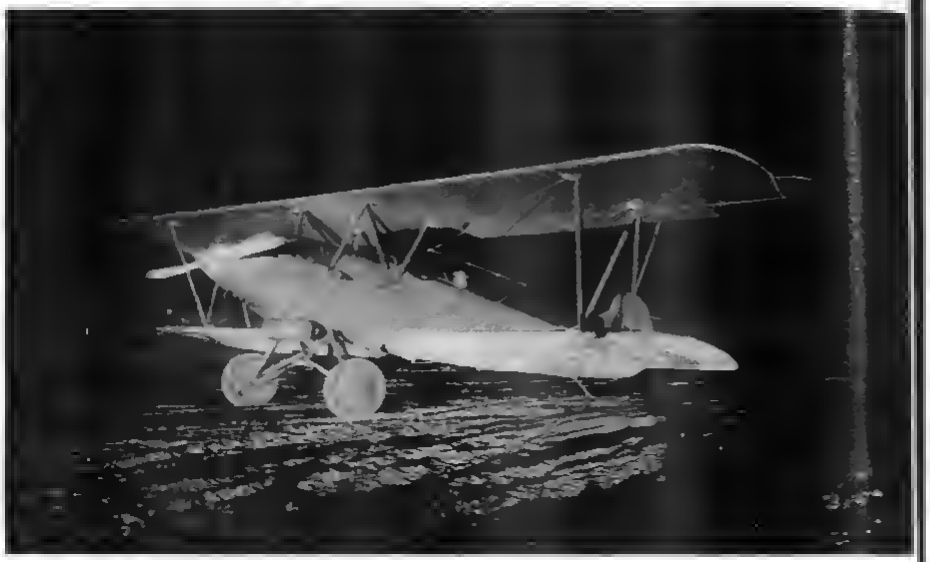
The splendid effort made by Lieut. "Al" Williams should not be forgotten. He should be encouraged to bring his plane up to a speed if possible to make it a possibility in next year's contest. Other planes should be constructed, for the possibilities of speed of aircraft have not as yet been attained, each year of the Schneider Trophy Contest having produced some astonishing increases. The winner of the race at Venice, Flight Lieutenant Webster, said after the race, that in spite of the sharp turn at the pylons he felt no inconvenience physically. The goal of five miles a minute has been crossed, and it is to the designers of England, Italy, France and the United States that the world looks for the six mile a minute speed.

Passenger Log Cards

ONE FORM of novelty advertising now being employed by a few commercial airplane operators, and one which merits further adoption, is that of supplying all aerial passengers, business or pleasure, with written records of their trips in the air.

These records are in the form of small pocket cards on which can be entered the date of flight, type of plane, passengers' name, pilots' name, etc. Some of them are even designed so that several flights can be recorded on the same card.

The value of this idea as regards the possibilities of repeat patronage is self evident, and as an additional incentive it might prove of considerable worth to make some sort of an arrangement whereby a passenger becomes entitled to one free flight when a certain number of hours of flying time over a particular line have been entered on his passenger log card.



A dark blue Travel Air plane 900 ft. away from two Sperry arc floodlight units at Mills Field, Calif
(c) W. S. Levin

The San Francisco Airport

Mills Field, Which is Municipally Owned, is Rated as One of the Best Illuminated Airports in the World

By C. D. JOBSON

SAN FRANCISCO was one of the first cities to take the lead in establishing a Class "A" airport that is municipal in its entirety. There are, of course, many airports in the United States but they are either owned by the Army, Navy, Air Mail, or private contractors.

Municipalities have lagged behind, and possibly there are many good excuses why they have. It is quite difficult for a municipality to select the site, obtain the funds and make the airport complete down to the lighting. San Francisco, therefore, deserves much credit for actually putting its airport over and doing so without the influence of the Lindbergh flight, because the airport was officially opened on May 7, 1927, and the illumination was turned on June 15.

At the present time, there are countless numbers of municipalities that are either completing or planning airports, and it is hoped that San Francisco's success will prove helpful.

Mills Field, the municipal airport of San Francisco, is about 14 mi. south of San Francisco and is located on San Francisco Bay. Bay Shore Highway runs past the field. Fig. 1 shows the layout of the field which is 5,800 ft. x 1,400 ft. There are three runways, each 200 ft. wide, the longest being 5,700 ft., or about 1½ mi. long, which provides an adequate runway for heavily laden planes that may participate in nonstop transcontinental or transoceanic flights. The cross runways are 2,600 ft. and 1,800 ft. long. The latter runway will be continued across the road for a length of 1,200 ft., to be used as an emergency runway. The runways are graded and hard, and are rounded so as to drain quickly and will be good in any weather.

The field has a completely equipped administration building, hospital, and meteorological department, a representative of the Weather Bureau being located there, making daily surveys of meteorological and aerological conditions. One of the prominent oil companies has a gasoline and oil filling station at the field.

No. 1 hangar shown in Fig. 2 has 10,000 sq. ft. of floor spacing, all of which has been contracted for by the operators of the transcontinental air mail planes. The contract for hangar No. 2 was let by the city on Sept. 7 and will have 31,000 sq. ft. floor spacing, being divided into three interior sections. Thus additional space is also contracted for. Space and plans provide for five additional hangars, making a total of eight hangars. The new hangars will be added as facilities of the field are further taxed, and plans have already been made for reclaiming a part of the Bay front so that the field can be widened when necessary and a seaplane harbor added.

The illumination was carefully planned and is absolutely complete in every respect. The complete illumination layout is also shown in Fig. 1. A Sperry 24" Revolving Beacon with

Fig. 2. Hangar No. 1, showing the Sperry 24" revolving beacon, wind cone and floodlight units.
(c) W. S. Levin

automatic lamp changer, is mounted on a platform on top of hangar No. 1, being 40 ft. from the ground.

Two Sperry 18" High Intensity Arc Floodlight Units form the necessary landing field equipment. (Fig. 3). They are mounted on a platform which is 10 ft. x 12 ft. Each one of these floodlight units spreads the light into an 80 deg. fan that gives 1,000,000 cp. on the field. Each unit covers approximately 50 acres, and with the two lights in operation, overlapping, the field is illuminated into a 160 deg. fan of light. The lights may be trained along the runways if desired.

The spread lens door on either floodlight may be folded back within a few seconds and the unit can be elevated and

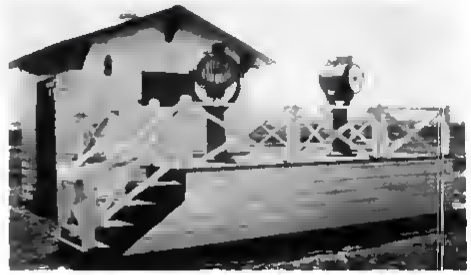


Fig. 3. Sperry 18" high intensity arc floodlight mounted on platform with motor generator house in rear.
(c) W. S. Levin

locked into a 45 deg. angle position, forming a powerful ceiling light. A ceiling light is of great importance when there are low hanging clouds. The height of the ceiling can be telephoned or telegraphed to various other airports and the information given to the pilot before they take off for Mills Field.

The beam of the Sperry Floodlight Unit with the door folded back is 30,000,000 cp. In slightly hazy weather, or when there are low hanging clouds, and a plane is expected, this light can be used as a hand rotated emergency beacon, throwing its powerful 30,000,000 cp. spot on the clouds, which may help the pilot find the field, probably saving valuable life and property. Within a few seconds, the door may be again put into position and the light turned back into a floodlight unit. With these types of floodlight units, the safety factor of night landings is highly increased. The motor generator for operating these two units is a Westinghouse 14 K.W. Type CSSK generator and is located in the motor generator house which is 12 ft. x 12 ft., (Fig. 3).

There are 32 border lights, spaced 300 ft. apart. They are on a multiple circuit and are Westinghouse Style 354419 with multiple sockets. The border lights have clear glass globes, except at the approaches to the runways where they are green. There are 18 obstruction lights which are of the same type as the border fixtures except that they have red globes that are placed on the top of each of the 18 telegraph poles approaching the field. There are no obstacles on the field; consequently, no obstacle lights are necessary, but the

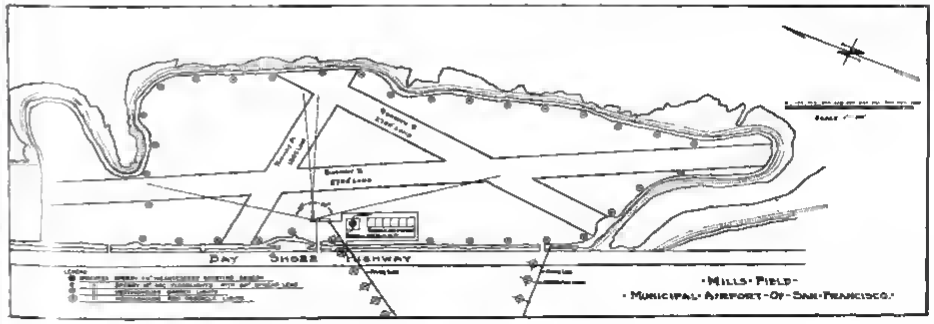


Fig. 1. Map drawing of Mills Field, municipal airport of San Francisco.

type of fixture for this purpose would be the same as for the obstruction lights

The wind cone which is located on No 1 hangar is 15 ft long. It is illuminated at night by a 300-watt floodlight within the cone as will be noted in Fig 4.

Westinghouse WK 62C safety switches and Type JT safety dead front panel boards are used throughout the installation. The exterior of the Administration Building and Hangar No. 1 is illuminated by Westinghouse exterior fixtures, Catalog No. 349810 reflectors, No 336391 sockets and 300

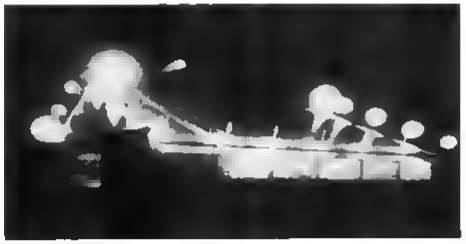


Fig 4 Hangar No. 1 illuminated at night. Note beacon and wind cone. (c) W S Levin

watt lamps. The method of installation is shown in Figs 2 & 5, and the illumination at night is shown in Figs 4 & 6

Hangar No. 1 is illuminated inside with Westinghouse interior reflectors, Catalog No 306500, with No 336391 sockets and 300 watt lamps.

It is interesting to follow the method which is necessary for a city to promote an airport, and the committees necessary to establish Mills Field provide an excellent example

First, an airport committee for the city was appointed. This committee consisted of Supervisors Kent, Gallagher and

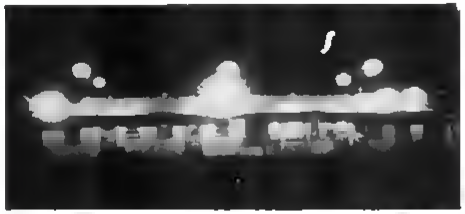


Fig 6 The Mills Field administration building illuminated at night. (c) W S Levin

Roncovieri. After the location was settled on, the negotiation for the acquisition of the land was handled by J J Phillips, right of way engineer.

The next step was the appointing of engineers for the construction of the field, design and construction of buildings. M M O'Shaunessey, chief engineer for the city, selected F. O Shutts as field engineer in charge of construction, and G D Burr, R. B. Redington and L. J. Archer as engineers in charge of building and building design.

As the work at the field progressed, the next step was investigating the types of lighting units to be selected in order that the field could be efficiently and economically illuminated

Fig 5 Administration Building showing installation of Westinghouse building floodlight units (c) W. S. Levin

and be placed on a 24 hr. flying basis. This required the appointing of an electrical engineer to supervise the installation, and W S Levin was selected as electrical engineer in charge, of Mills Field

One of the final and most important steps was to select a superintendent to operate the field, and it is the opinion that the city of San Francisco was fortunate in obtaining the services of Frank A. Flynn, who, in addition to being treasurer of the Pacific Air Transport Co which carries mail between Seattle and San Diego, is also secretary of the San Francisco chapter of the National Aeronautic Association. Mr. Flynn is an experienced flier, being a war ace with the British Royal Air Force in Russia. Bartlett Stephens, assistant airport superintendent, is also an experienced aviator

Four Models of Chanute Plane Discovered in Chicago Museum

FROM TWO dusty packing cases in the attic of a Chicago museum four of the world's most precious model airplanes have recently been recovered. They were the property of Octave Chanute, often called "the Father of American aviation", and were used by him in his study of the theory of flight as well as his practical experiments in attempting to establish the principles of equilibrium for heavier-than-air machines

The models had been presented to the Chicago Academy of Sciences by Chanute's heirs following his death in 1910. Since the academy's work lies only in the field of natural sciences these historic relics had been stored in the attic and gradually forgotten, until a new director, Dr. A. M Bailey, caused an inventory of odd corners to be made

The models are constructed of bamboo splints and balloon silk and weigh but a few ounces each. The largest has a wing spread of only five feet from tip to tip. Chanute's friends recall seeing the strange devices hanging in the library of his Chicago residence, where for years he was pondering the problem of how birds fly.

In 1896 he built large gliders on the patterns of these models and in the solitude of the sand dune country on the southern shore of Lake Michigan near Miller, Ind., put his theories to practical test. His summer's work convinced him that the bi-plane type of glider most nearly satisfied the requirements for securing "automatic stability at all of angles of flight and conditions of wind," which was the problem he had set himself to solve.

Now that the models have been brought to light, Director Bailey of the Chicago institution has decided the public has a right to them. Plans are afoot in Chicago for the creation of a great industrial museum to be financed in part by a gift from Julius Rosenwald, merchant prince and philanthropist.

A solo prospect is directed to "take her up".

Conducting a Flying School

By WILLIS PARKER

ONE OF the first essentials in learning to fly is absolute confidence in the construction, and therefore safety, of the plane in which the student is to take his instruction, according to officials of the Alexander Aircraft Company, Denver, Colo. Therefore, after the student has passed his physical examination for enrollment in the Alexander School of Aviation he is taken through the factory where the details of construction of Alexander planes are disclosed and explained. There is no hurry about this, either; the student is urged to spend as much time in the factory as he can in order to become certain in his own mind that this type of plane is well made and that it is safe when properly flown.

This gives the student confidence in the plane when he gets into the air for the first time with his instructor. He must also have confidence in his instructor, and therefore he is taken to the field and permitted to watch the chief instructor and his assistants test out new planes, take other students into the air and note how planes are assembled and the other activities of the field staff.

Confidence in the plane and confidence in the instructor removes one obstacle in learning to fly and shortens the time necessary for learning several hours, it is believed.

The Alexander School of Aviation is based upon practical flying rather than stunt flying. There are three phases—the reading course, lecture course, and actual flying course. The three are coordinated and conducted somewhat simultaneously. The reading course consists of a book of approximately 100 pages written by Cloyd P. Clevenger, the company's chief pilot and flying instructor, and published by the Alexander Aircraft Co. The title is "Modern Flight—A Manual of Practical Flying". While it is not designed to be used as a correspondence course in flying, it is constructed in such a manner that the student can obtain almost all the information he needs on how to fly, except the actual practice.

Facsimile of the flying school diploma given by the Alexander Aircraft Co

The material is presented in a simple style which does not require a college education to understand the phraseology or the technical terms employed. As far as possible technical phrases are avoided or at least so fully explained that none but an illiterate would have difficulty in grasping the meaning. It is profusely illustrated with drawings and diagrams and the back pages are devoted to a nomenclature in alphabetical order

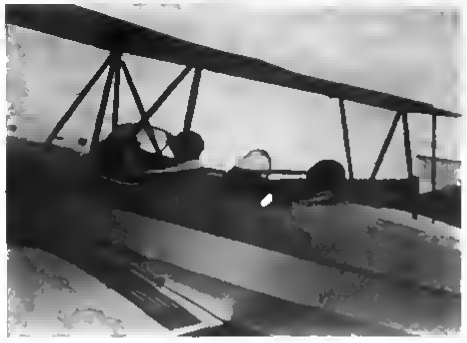
The student is expected to familiarize himself with the contents of the book and with these aviation terms so he will display some enlightenment when obtaining oral instruction, either on the ground or in the air

Student Receives Ground Instruction

After having watched the construction of airplanes from the beginning to end and thereby obtaining confidence in the strength of the Alexander plane in which he is to receive his instruction, and, having familiarized himself with the terms in the book, he goes to the field for his first lecture and experience in the air The instructor explains the functions of the various parts of the plane by actual demonstration of the effect of pushing the stick this way and that and the rudder controls this way and that. All of this time the student is supposed to have his manual open to compare what the manual says with what the instructor says and demonstrates. The lecture takes from fifteen to twenty minutes. Then the student is taken up for his first lesson.

The pilot sits in the front seat and the student is cautioned to touch nothing until the plane is up 2,000 ft, whereupon the pilot signals, by shaking the stick, for the student to take the stick and get the "feel" of the controls.

To offset the danger frequently occasioned by the pupil "freezing" to the control and thereby endangering the lives of himself and his instructor, the dual controls in the training ship are equipped with a collapsible "joy stick" of Alexander



The instructor signals to pupil to take the controls by raising both hands.

invention, which collapses in the hands of the student the moment the pilot-instructor grasps the stick in his own seat.

Before going into the air, the student signs papers releasing the company from liability The papers explain in minute detail all of the hazards of flying, and, in signing them, the student acknowledges the risk and absolves the company of responsibility in case of an accident. He also pays a certain amount down in advance which pays for five hours instruction, at so much per hour. In case he doesn't want to pay in advance, he may take his instruction an hour at a time and pay for it accordingly. However, the company prefers not to bother with a student who does not want at least five hours instruction After the first five hours, additional hours may be had at an hourly rate, which, according to the school's executives, is practically cost.

The average student is ready to solo after eight hours of instruction. When he solos he rents the plane at a stipulated amount per hour, putting up a $500 bond or that much cash, against damage to the plane. If he doesn't want to put up the bond or the cash, he may rent a plane at an increased rate per hour and the company assumes the risk. If the student buys his own plane first and learns to fly in it, the charge is one half the regular rate

Novel Method of Paying

The instruction thus far is for a private pilot's license Those wishing to qualify as industrial or transport pilots under the Department of Commerce regulations are given the necessary instructions in meteorology, aerodynamics, rigging, air traffic rules, etc, at a small additional charge.

There are many young men who desire to learn to fly but haven't the money to pay for the course, so a limited number are enrolled in the cadet course Originally this applied only to the factory wherein the cadet was paid 15 cents an hour for six weeks work in the factory to learn something of the construction principles of aircraft manufacture and to take jobs later as his services were needed. In extending the system to the flying field, the cadets obtain instruction in field mechanics and are paid something for their services—enough to pay room and board. When opportunity affords they are given positions at the field with better pay and may save enough to pay for instruction from time to time and eventually get the training necessary for a pilot's license.

Some instruction in long distance flying is frequently possible. When the company must deliver a plane to a distant point the pupil, if he is sufficiently advanced, is permitted to go with the pilot and get the experience of flying continuously for many hours at a time over strange territory.

Another essential to a flying school is accessibility to the flying field and adequate lodging Since so many students come to the Alexander school from distant points, aid in obtaining board and room at a nominal cost is offered Transportation to and from the flying field is provided morning, noon and night. In connection with the school, the company assists graduates" to obtain positions, but there is no guarantee of position.

"While we cannot guarantee positions after they finish their courses", says Mr McInaney, "we do, however, put them in touch with our dealers and assist them to obtain work through our Aircrafter employment page. While we prefer not to make any promises of tremendous incomes to new pilots, we do know that commercial aviation is growing so rapidly that no one can foretell just what opportunities will be presented in the future.

Staff of Five Instructors

"Our course is not the ordinary flying school course We teach in addition to regular straight flying, the 'stalled flight' technique. Every student must become expert in handling the plane in the most treacherous possible positions at the stalled point."

While Cloyd Clevenger is the chief instructor, he has four assistants The school staff consists of three regulars and two extra instructors. One instructor can care for ten students, giving each 15 to 45 min a day About the most a student can take in a day is one hour.

Chief Pilot Clevenger divides the flying instruction into five stages. One is teaching the rudiments of how to fly the plane in a straight course In the other stages he teaches pupils how to turn and bank, some of the more intricate maneuvers of stalled flight, and how to take off and land When the pupil has mastered straight flying and banking, the instructor initiates him into the stalled flight maneuvers, how to master tail spins, side slips and other unusual situations in which he may find himself

First Flight Most Discouraging

"A little stunting", says Clevenger, "goes a long ways toward taking the cockiness out of an overly confident student who at this stage of the lessons thinks he has learned about all there is to know about flying

"The first flight with an instructor is the most discouraging to the average student. The plane flies the student instead of the student flying the plane", he explained. "The pupil is there tense and straining and the plane wanders all over the sky with the nose down or too much elevated, one wing or the other drooping and the speed slipping away until the effort ends in stalled flight and the instructor has to take control No matter how cocky he was at the take off, the beginner nearly always crawls out of the cockpit, after the first attempt to handle the plane with the question, 'Do you think I'll ever learn to fly?'

"The hardest thing at first is to get the pupil to relax while he is handling the controls. They seldom appear scared but they are usually as grim as a judge pronouncing a death sentence I start kidding about how foolish they look and, if I can get a laugh, I know the pupil has overcome one big obstacle

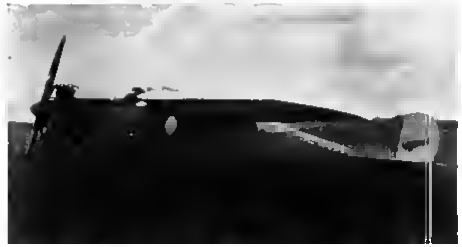
The company has arranged for a series of fifteen minute lectures on flying given over the radio, which will serve two purposes—increasing the desire to learn to fly and the desire to own an airplane. The talks are given over General Electric station KOA on Friday evenings from 8 to 8.30 o'clock and were begun on Sept. 9. The information is being dispensed in the manner of a dialogue—Clevenger answering questions which are propounded regarding flying, learning to fly and the practicability of airplanes for business and pleasure. This broadcasting station is sufficiently powerful as to be heard all over the United States.

The Victors

Members of the winning Schneider Trophy team with the trophy at a London banquet, given recently by the Aero Club Left to right, Flight Lieut. S. N. Webster, the winner, Flight Lieut S M. Kinkead, Squadron Leader L. H. Slatter, Flying Officer H. M Schofield, and Flight Lieut O. E. Worsley

Cessna-Roos in Production

A RECENT communication from the Cessna-Roos Aircraft Co. of Wichita, Kan., states that it has been incorporated with a capital of $200,000. A new factory building, with 20,000 ft. of floor space, is now under construction and the company is now producing an internally braced monoplane powered with either a 90 hp Anzani engine or a Wright Whirlwind engine. The low powered plane is said to have a wide speed range with a maximum speed of 110 m.p.h and a landing speed of 45 m.p.h with a cruising speed of 90 m.p.h. The higher powered model is claimed to give a high speed of 148 m.p.h with a landing speed of 45 m.p.h. climbing to 1000 ft 40 sec



The Cessna-Roos monoplane now in production at the Wichita, Kan., factory.

The Whirlwind model was entered in the National Air Derby, but due to engine trouble, it made a forced landing putting it out of the event. The manufacturers state that they will go into production on this type in the near future at the new plant. Both the Anzani and the Wright Whirlwind powered models have a three place cabin comfortably upholstered.

New I.L.A. Trophy Award

A NEW venture in aerial competition is about to be launched by the International League of Aviators. Instead of distributing National Trophies among the aviators of the twenty nations now members of the League, a competitive Trophy will be provided for each country, to be placed in the headquarters of each national section.

The aviators of each country will compete for the honor of having their names inscribed yearly upon the Trophy, and will receive also a replica of the award in either stone or metal, as well as the League's "Certificate of Honor". Each National Winner will become automatically a candidate for the Harmon International Trophy, which was won last year by Pelletier Doisy, and which will have inscribed upon it next spring the name of the "world's champion" for the present year.

Rear quarter view of the "Flamingo" biplane

The "Flamingo" Biplane

German Training and Stunting Airplane is Powered With a Siemens-Halske Engine

THE TRAINING and stunt plane "Flamingo" manufactured by the Bayerischen Flugzeugwerke A.G. in Augsburg, Germany, and now being flown in this country by Miss Thea Rasche, was developed with the purpose of producing an efficient, sturdy training plane which besides being suitable for school purposes would also be useful for all kinds of exhibition and stunt flying. By continual improvements in design and air worthiness this objective has been with great success obtained in the models U12a (equipped with a Siemens-Halske seven cylinder engine Sh 11 of 84/96 hp.) and U12b (equipped with a Siemens-Halske nine cylinder engine, Sh 12 of 108/125 hp.)

The newest models which retain the proven method of weight distribution, general appearance or form and main dimensions have increased the torsional strength in the wing structure by an increase in the number of box spars. The ailerons are now supported at three points in order to insure more safety. The lift of landing gear bumpers, which consist of the usual wound rubber cord, has been increased by a widening of the rear surface.

Miss Thea Rasche

The plane is a single celled biplane, with three part upper wing (center section and two panels), upper and lower wings have slight dihedral and are of the same span. Each wing contains two box spars with pine webs and ply (wood panelling) which are connected to each other by wooden ribs and box spars. The surface between the spars is taken up by the internal bracing consisting of dural tubes, steel wires and dural plates. The external bracing consists of Bowden cables (two flying and two landing wires on each side). The wing struts are "I" shaped and built up of sheet dural riveted to dural bers. The center section struts which are inclined forward and are of the same construction form a frame stiff at the corners. The two upper wings are fastened to the center section, the lower wings to the fuselage, all fastening points have dural fixtures and steel bolts. The four ailerons have steel tube axles and dural ribs and are supported at three points.

The fuselage has the two seats in its center part, the engine in front and control surfaces in the rear. This is built up of wood frames covered with ply wood. The center section braces are fastened to heavy fixtures which are bound together and to the main braces. All reinforcements are provided on the fuselage where the lower wings fasten in order to take up the strains carried by these wings. The wooden seats help stiffening the center of the fuselage. The outer veneer of the fuselage is natural color and lacquered. (Miss Rasche has her plane painted red). The width of the fuselage at the seats is 75 cm. (30"). Back of the pilot's seat (rear) there is provided a luggage space covered with a dural cover and easily accessible.

The [illegible] surfaces consist of a horizontal, non-adjustable stabilizer of standard wood construction with steel tube axles. The tail surfaces are braced against each other and the fuselage to prevent viluration (Schwinguns erscheinung). The [illegible] under carriage fastens to the fuselage by means of "V" struts. The continuous steel tube axle carries the 760 x 100 (30.4" x 4") wheels and is fastened to the undercarriage on both sides by rubber cord. The front and rear legs of the "V" struts are reinforced with heavy cables. The tail skid is of ash, obtains its spring action thru rubber cord. It can move sideways and is usually made to move with the rudder.

Front view of the "Flamingo" biplane

Dual controls are provided. The elevator control is through a rod and arms. The rudder control is by a rudder foot bar and cables. The ailerons control by segments on the control shaft and cables. The arms are of dural tubes and detachable, the control shaft of the steel tubing, the rudder bar of the steel tubing with sheet metal foot rests.

The engine mount (for the 7 or 9 cylinder Siemens & Halske engines) consist of a framework of dural and steel tubing, which is resisting to torsional and bending stresses and gives excellent protection in case of a crash. It is fastened by four bolts to strong sheet steel supports.

In the model U12a the engine mount is made for the 7 cylinder radial air cooled Siemens-Halske engine Sh 11 84/96 hp. The model U12b has an engine mount for the 9 cylinder radial air cooled Siemens-Halske engine Sh 12 108/125 hp. Both engine mounts with motors can easily and in a short time be exchanged, so the same plane can be used with either motor. The engine mount is separated from the fuselage by an oil fire wall. The oil tank is supported in the engine mount and holds 13.2 qts. It is made of sheet brass and can easily be taken out for cleaning. By taking out two bolts the whole engine mount can be swung out, so that through a door in the fire wall the rear of the engine and the magnetos, carburetors, etc. are easily accessible. Thus the care of the engine is greatly facilitated. The two brass fuel tanks are in the center section and contain each 10.56 gal. Easily visible windows are provided so the fuel supply can be watched. All engine control levers can be operated from both seats.

Side view of the "Flamingo" biplane

The equipment includes the following instruments: clock, compass, tachometer, Bruhn airspeed indicator, alternator, Bosch hand starter (booster magneto), Bosch switch, and a hand pump primer (Benzinvernebler Athmos).

When the plane is equipped for dual control a tachometer and air speed indicator are also provided for the front seat. The seats are provided with cushions and safety belts. At the rear seat there is a hook pocket in the panel board. With each plane a cloth cover is provided for the propeller, engine and to cover the two cockpits.

Bronze Trophy Will be Awarded Yearly to Leading Woman Flier

THE INCREASING interest of women in aviation, and the possibility that some of the world's records may yet be established by women is to be recognized during the coming year by the International League of Aviators, which now has growing sections in twenty countries. It has been decided to create a Woman's Trophy, in bronze, to be awarded annually to the feminine aviator in any part of the world making the most notable performance.

The electing jury will be composed of the national representatives of the International League of Aviators, presided by Clifford B. Harmon, of New York and Paris, and record-breaking performances as well as general services in the development of flying among women will be taken into consideration. The Trophy will be retained from year to year in the headquarters of the League, but a replica, bearing the name of the winner, will be presented to her, and her name inscribed on the Trophy itself. In addition, a parchment certificate of her achievement, such as the I.L.A. intends to award to the authors of notable performances and prize winners in the future, will be given to the successful women candidates.

A competition for the design of the certificates is soon to be opened among artists and students with a suitable cash prize for the winner of the contest. Women aviators are eligible to membership in the I.L.A. under the same conditions as male members,—the obtaining of a pilot's license or brevet. France, England, Italy, Spain and the United States now have several enrolled members.

Air Marker Beacons Tested

TEST FLIGHTS have proven the air marker beacons at College Park, Md., and Sunbury, Pa., very satisfactory, according to a statement by the Bureau of Standards made public recently by the Aeronautics Branch of the Department of Commerce.

Research is also being conducted on the radio directive beacon by the Bureau of Standards at Bellefonte. Experimental flights are being made at that station as well as at College Park. Two round trips have recently been made between the two stations using the beacons and during which connections in the setting of their courses have been made.

Laboratory work has been started towards refining several elements of the equipment used in beacon flights in order to further adapt the beacon to commercial application.

Officers and personnel of the American Eagle Aircraft Corp.

American Eagle Production

Output Has Been More Than Doubled Since Last Spring and Further Increase is Planned

PRODUCTION OF the American Eagle Aircraft Corp., Kansas City, Kan., manufacturer of the American Eagle biplane, has been more than doubled since last spring, at which time two planes were produced each week, according to the officials of the company. By the Spring of 1928, the company expects to better its present five planes a week record in the new enlarged factory which will then be completed in North Kansas City.

The American Eagle Company claims to be one of the dozen airplane factories in United States actually operating on a real continued production basis. Although a very young company, it is stated as ranking third in production in United States. This company shipped its sixty-seventh plane to New York.

Plant is Two Stories High

The daylight plant is located at 2330 Harrison St. and is two stories high, containing 12,900 sq. ft., more than six times the floorage used at the time of its inception in December, 1925. This rapid expansion is considered as a tribute to the quality of the plane, the merchandising methods and the added interest in aircraft.

Over seventy-six persons are employed on the factory, sales and office staffs. Two pilot salesmen cover United States and to date have secured distribution in twenty-one states. On the force are also two local pilots, one a test pilot and the other a ferry pilot. Two salesmen, one stockroom man, three stenographers, one repair man, a general superintendent and a superintendent of wings complete the staff. The factory is divided into an assembly department, welding department, where every part is made with jigs or dies, a sheet metal department; wing construction, wing covering and finishing department; Dnco painting department; wing construction department, and office.

Every part is made for the plane in the factory except the instruments, engine, propeller, wheels and tires. Each item is constructed with utmost care as each worker knows that one defect in a plane may cause a loss of life. There are no slap-bang methods used. The plant is well equipped with 34 electric tools, jigs and other items which necessitated the expenditure of $36,000. A surplus of wings, landing gear and propellers are always on hand in case of need. Six sets of wings are manufactured weekly. When the planes are completed they are assembled at the plant minus the wings which are hauled by truck to the Richard Airport, near Kansas City, and there placed on the planes.

A section of the wing finishing department.

E. E. Porterfield, Jr., for years a civilian flier is vice president and general manager of the company. L. A. Bichel-

Wing assembly section of the American Eagle factory

is superintendent of the wing department and has been associated with the company since its inception. "Dan" Noonan is general superintendent. He has had nine years of Army and aircraft factory experience. "Larry" D. Ruch, the test pilot, is an ex-Army pilot with five years factory experience to his credit. L. S. Turner, who was an Army pilot for several years is in charge of sales.

Following the event of the Lindbergh celebration Aug. 17, the Rotary Club was so inspired by the colonel's visit that it was interested to the extent of purchasing the American Eagle plane which before its purchase had been taken up for a test flight by Colonel Lindbergh. The club is probably the first

Fuselage assembly section of the American Eagle factory

civic organization in Kansas City to own its own airplane which will be used to entertain notable guests whom will be shown the city from the air.

Recently a contract was made with a New York company, the American Eagle Aircraft Distributors, Inc., Curtiss Field,

Wing assembly section of the American Eagle factory

which called for fifty planes to be shipped during a twelve months' period. This distributor has already oversold his quota and is asking for more planes.

Another contract was secured from the Edgar Tobin Motor Company of San Antonio, Tex., which called for six planes a month to be sent during a twelve months' period. This company recently gave the American Eagle Company what is claimed to be the largest order ever given for airplanes in United States—seventy two. The New York distributor gave the second largest order for airplanes ever obtained by any aircraft factory—fifty.

Due to a continual and increasing demand for the American Eagle biplane, a new plant 100 by 300 ft. will be erected next spring. It will adjoin the municipal airport in North Kansas City. It will be a modern, daylight factory equipped with the latest machinery and facilities for the manufacture of aircraft.

Mr. Porterfield gives the following rules for success in aircraft manufacture and merchandising: (1) Use only carefully selected material, (2) The plane must be well designed and manufactured only by expert workmen, (3) A good, fair business policy is necessary; (4) A good location is an important requisite—Kansas City is only two days away from the furthest point in United States, (5) A sale should not be considered complete until the prospect knows how to fly the plane and is completely satisfied with his purchase.

Mail Contract Bids Invited

AN ADVERTISEMENT was issued recently inviting proposals for the transportation of air mail under contract as follows: Atlanta, Ga., via Jacksonville to Miami, Fla., and return. Distance each way approximately 595 mi.

The route is open to bidders regardless of residence, and bids will be received at the Department in Washington until 12 o'clock noon, Nov. 19, 1927. Copies of the advertisement are on display at all post offices on the route, and the instructions to bidders contained therein are uniform.

The schedule to be adopted will require an average flying speed of at least one hundred (100) miles per hour. The Department realizes that in some instances, due to weather conditions, etc., it may be impracticable to maintain such an average, but under favorable conditions even better time may be possible. Proper allowance will be made in all such cases.

The bond to be furnished with the proposal is in the amount of $15,000. Cashier's or certified checks are not acceptable as a bond. Contractors must permit planes of other contractors on connecting lines to land and take off at all fields on this route when such planes are actually engaged in transporting mails to or from this route.

Proposal blanks may be obtained from postmasters on the route or from the Post Office Department, Washington, D. C.

Side view of the Keystone "Pronto" (Wright Whirlwind)

The Keystone "Pronto"

K-55 to be Used on Peruvian Airline and Will be Equipped With Landing Gear and Pontoons

BY THE use of airplanes, a trip which formerly took from 21 to 28 days will soon be possible in 2½ days. The contemplated air route is to be from Lima, the capital of Peru, to Iquitos, Peru, over some of the roughest country in the world and is part of an aviation development program formulated by the Peruvian Navy.

The planes to be used on this airline were recently completed by the Keystone Aircraft Corp. of Bristol, Pa. The planes are of the type known as the Keystone "Pronto" or K-55. They are two seater biplanes, fitted with supercharged Wright Whirlwind engines. Four of the six planes ordered have been equipped with pontoons, while the other two were equipped with wheels for overland flying.

The airline will use seaplanes between Iquitos and Puerto, Bermudez, a distance of about 720 mi. It is expected that with two passengers and pilot, in addition to 400 lb. of mail and express matter, the Pronto will have an average speed of 90 m.p.h. making the trip in eight hours. At Puerto the passengers and express matter will be removed to a Keystone landplane powered with a supercharged Wright Whirlwind. This plane, another of the Pronto type, will fly over the Andes Mountains at altitudes ranging from 14,000 to 16,000 ft. It will land at San Ramon, Peru, a landing field 10,000 ft. above sea level. From there passage will continue by rail to the capital at Lima.

The air route is over tropical jungles and high mountains. Transportation from Iquitos to Puerto, Bermudez, is now by launch up the Ucayle River, requiring ten days through country infested with malaria and yellow fever. This country is about four degrees from the equator and it is estimated that a foreigner cannot live there more than about 18 months. It can thus be seen that air travel over this section of the route will [illegible] considerable hardships besides saving time.

After leaving Puerto, Bermudez, ground passengers travel [illegible] up to an altitude of 15,000 ft. in crossing the Andes. This portion of the trip affords quite a contrast to that on the [illegible] tropical river.

The engine to be used must of necessity be fitted with superchargers when crossing these mountains. A Roots type supercharger is installed on the Wright Whirlwind engine, the practical installation of which was worked out by the Wright Aeronautical Corp. of Paterson, N. J., in conjunction with the Allison Engineering Co. of Indianapolis, Ind. With the Roots type blower installed the Pronto can take off with a full load at an altitude of 12,000 ft.

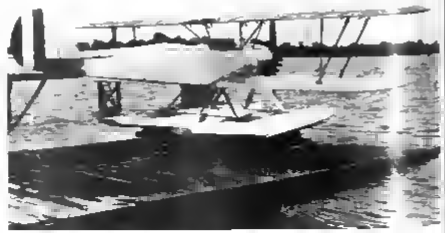
The plane is a conventional single bay biplane with a welded steel fuselage and wood wings. Seamless steel tubing is used for both the fuselage and the interplane struts. Box section wing beams and wood ribs are used. The airfoil section is Gottingen 398.

In the rear cockpit is the pilot's seat, in front of which is a seat wide enough for two passengers. Behind the entire compartment, in front of the passengers, is a large space for mail or luggage. Gasoline is carried in two 30 gal. tanks in the upper wing and fed to the engine by gravity.

Wheel and twin float landing gears are interchangeable by removing four bolts. The land chassis is of the split axle type of seamless steel tube construction with oleo shock absorbers. The floats are wood construction braced by seamless steel tube struts and cables.

The general specifications of the Keystone Pronto, K-55, are as follows:

Span	39 ft 11 in
Length	26 ft 9 in
Wing area	365 sq. ft.
Airfoil	Gottingen 398
Weight empty	
land plane	1975 lb.
seaplane	2375 lb.
Useful load	
pilot	175 lb.
two passengers	350 lb.
mail	200 lb.
baggage	200 lb.
fuel	350 lb.
oil	35 lb.
Total useful load	1310 lb.
Total weight	
land plane	3285 lb.
seaplane	3685 lb.
Actual flight data, land plane loaded to 2450 lb.	
High speed	118 m.p.h.
Climb to 20,000 ft.	42½ min.
Climb to 10,000 ft.	12 min.
Rate of climb at sea level	650 f.p.m.
Rate of climb at 10,000 ft.	500 f.p.m.
Rate of climb at 18,000 ft.	300 f.p.m.
Land plane loaded to 3204 lb.	
High speed	112 m.p.h.
Take-off speed	37 m.p.h.
Take off 500 ft. run	10 sec.
Climb to 11,200 ft.	40 min. 10 sec.
Climb to 14,000 ft.	16 min. 25 sec.
Rate of climb at sea level	600 f.p.m.
Rate of climb at 10,000 ft.	300 f.p.m.
Seaplane loaded to 2748 lb.	
High speed	112 m.p.h.
Climb to 10,000 ft.	51 min.
Seaplane loaded to 3504 lb.	
High speed	106 m.p.h.
Take-off speed	44 m.p.h.
Landing speed	40 m.p.h.
Climb to 11,400 ft.	40 min.



The Keystone "Pronto" fitted as a seaplane

Daily Sales of United Cigar Flying Store Averaged $200

ACCORDING TO the United Cigar Stores, Co., the Sikorsky biplane fitted out as a flying cigar store was a financial success during its recent tour of the country. It is stated that the average day's sales were approximately $200. This fact speaks well for the future of the airplane as a commercial asset to business. All goods sold were not carried from one town to another, still, about 1700 lb. of merchandise were carried from town to town. The plane was registered as a regular United Cigar Store. The pilot was Capt. Roscoe Turner and the salesman in charge, Melvin Dunham.

The plan of action of advertising the flying store was as follows. The company's advertising manager sent a half-page advertisement to the papers, ahead of the arrival of the giant biplane. That advertisement announced the arrival of the floating store, and likewise described the plane and the kind of merchandise the store would carry. Further, for everything was done systematically, an advance publicity man went ahead of the plane and arranged reception committees with city officials, with chambers of commerce, and with various city organizations. He also interviewed the newspaper publishers, so that when the giant plane arrived in any given city full attention was given to the event.

The Sikorsky biplane, fitted out by the United Cigar Stores Co., as a regular cigar store and flown on a sales tour of the country

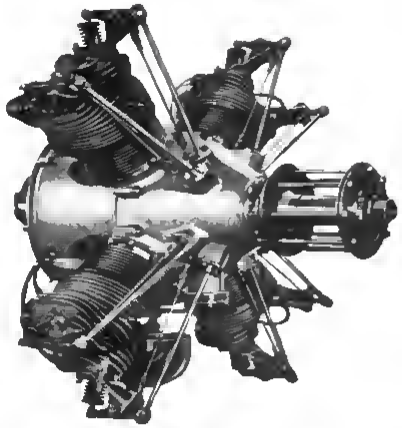
As the newspapers the country over carried the interesting and unusual story of the "First Flying Cigar Store" the idea was not alone a successful advertising and business venture but also served as a boon to commercial aviation.

Lectures on Aviation

Another boon to business, and aviation as well, was when Captain Turner talked personally before the various chambers of commerce, or some similar organizations, like the Lion's Club, the Rotary Club, and there he ably discussed the question of larger and safer airports, the future of commercial aviation as he viewed it from years experience in the air.

It is true that other corporations in this country have been using airplanes for certain simple publicity purposes but it is claimed that to date no other company has ever conducted a tour of America as did the United Cigar Stores Co., Flying Store.

The following cities were visited by the plane on its tour: beginning from Garden City, L. I., on July 9, 1927. Schenectady, Syracuse, Rochester, Buffalo, Cleveland, Toledo, Detroit, Lansing, Battle Creek, Mich., Grand Rapids, Chicago, Peoria, Bloomington, Decatur, Ill., Springfield, St. Louis, Cincinnati, O., Dayton, O., Columbus, O., Pittsburgh, Pa., Harrisburg, Pa., Richmond, Va., Washington, D. C., Baltimore, and Philadelphia. Then it flew back home to New York. The plane traveled to the cities in the order named above.



Fuel Tests *on the* Fairchild Cam Engine

Flights Made in Waco 10 to Determine Engine Endurance Possibilities

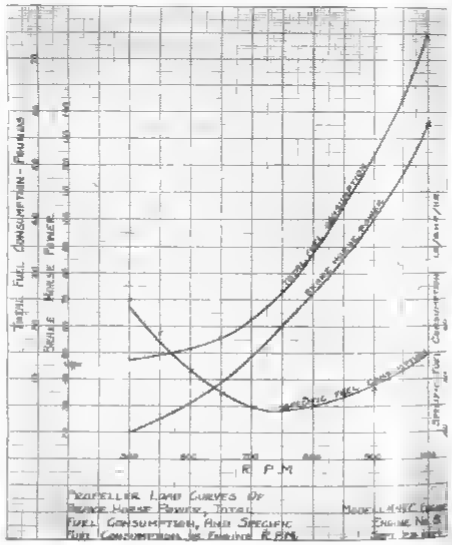
TWO FUEL tests [illegible] determine the fuel consumption of the Fairchild Caminez Model 447 cam engine when used in a modern type commercial airplane. The purpose of these tests was to let the manufacturers who are using this engine know what fuel consumption they might expect at various cruising speeds and also to determine whether this engine would be suitable for long duration flights. The Fairchild Caminez Engine Corp claims several special features in the engine which makes it a suitable power plant for breaking the world's endurance record.

A preliminary flight of seven hours duration was made on Oct. 1 in a Waco 10 plane powered with a Model 447-B cam engine developing 135 hp at 1900 rpm. The plane carried pilot and observer. In this flight a cruising speed of about 80 mph. was maintained at an average propeller speed of 725 rpm. Thirty-four gallons of gasoline were consumed during this seven hour flight, making an average hourly consumption of 4.8 gal. The engine used 1¼ gal. of oil throughout the test, the average oil consumption being 18 gal. per hour. The engine used in this test was an old experimental engine that had been flown a total of over 100 hr. without being overhauled previous to this flight.

Gasoline Capacity Increased to 110 Gal.

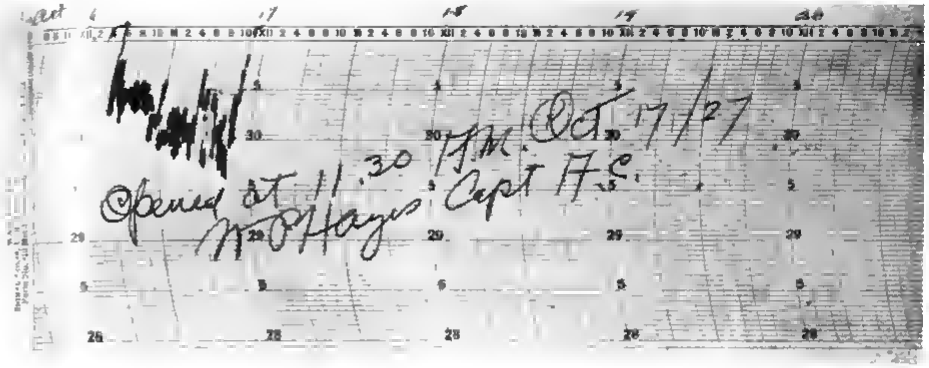
For the second test, the gasoline capacity of the plane was increased to 110 gal. In order to make this test official, Capt. W. P. Hawes and Lieut. J. Beveridge, Jr., of the U. S. Army Air Corps, together with Asst. Prof. O. H. Lunde of New York University, kindly consented to be the observers for the test and were present at the fueling of the plane and the sealing of the barograph used in the flight. This committee was also present at the end of the flight when the gasoline and oil tanks were drained, and broke the seal on the barograph and inspected the flight record. A photo of the barograph record is shown herewith.

The plane took off at 5:31 P.M. Oct. 16 with 107 gal. of gasoline and seven gallons of oil, which, together with pilot and instruments, made a total useful load of 1001 lb. The plane had very little difficulty taking off with this load, as



was to be expected, for in a preceding test an altitude of 15,000 ft. was reached with a useful load of 800 lb.

The pilot's records show that after gaining altitude, the engine was throttled to 800 rpm., this speed being maintained for about two hours, after which the propeller speed was reduced gradually as the gasoline load decreased. At 6:00 A.M. the following morning, after 12½ hr. of flying,



A photographic reproduction of the signed barograph record

[illegible] was turning at 690 rpm. Shortly after this, bad [illegible] and rain set in and for two hours the pilot found it necessary to fly the engine at nearly full throttle in order to avoid the rain as much as possible. At 10:51 A.M. the pilot landed the plane, finding visibility too poor and conditions unsuitable for obtaining fair data on average gasoline consumption **for this test.**

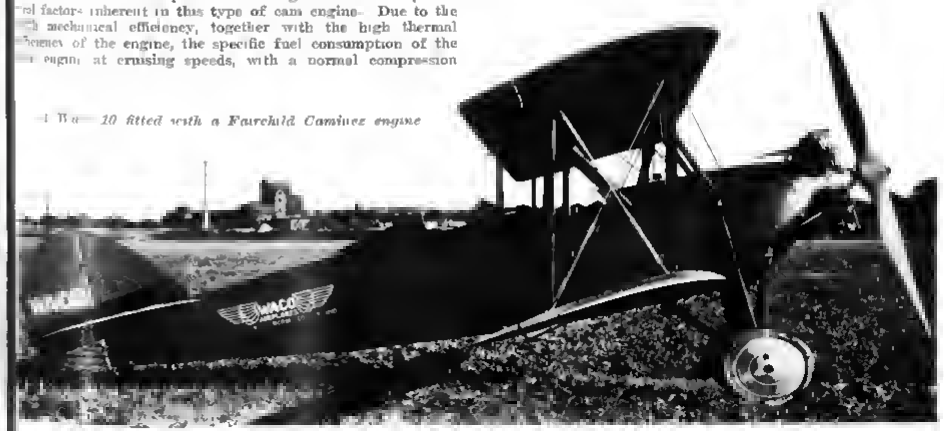
When the plane landed, 21 gal. 2¼ qt. of gasoline were pumped from the tanks, making a total gasoline consumption of 85.44 gal. The flying time was 17 hr. 20 min. as shown by the barograph record. The hourly consumption of gasoline was 4.9 gal. The oil tank was also drained and 5½ gal. of oil had been consumed making a lubricating oil consumption of 33 gal. **per hour.**

In these tests, the fuel consumption of the Fairchild Caminez engine was shown to be considerably less than any other power plant which is regularly employed with the Waco 10 airplane.

The low fuel consumption of the engine is caused by several factors inherent in this type of cam engine. Due to the high mechanical efficiency, together with the high thermal efficiency of the engine, the specific fuel consumption of the engine at cruising speeds, with a normal compression ratio of 5 to 1, is only .45 lb. per b.h.p. per hour. The high mechanical efficiency of the engine is due to the use of anti-friction bearings of the ball and roller type throughout, together with the absence of gearing and auxiliary valve actuating mechanism,—the push rods in this engine being driven directly from the main cam shaft, which takes the place of the crankshaft in the usual crank engine.

The high thermal efficiency of the engine is due to the efficient cylinder design employed, together with the very effective manifolding and carburetion used on the engine. The engineers of the Fairchild Caminez Engine Corp. also claim that the piston motion obtained by the cam mechanism produces a more efficient cycle than the crank mechanism in an internal combustion engine.

The cam principle of the Fairchild Caminez engine secures half propeller speed at the same piston speed of the crank engine without using gear reduction. The cam engine



A Waco 10 fitted with a Fairchild Caminez engine

therefore operates at slow propeller speed, and the large diameter, more efficient, slow speed propeller is also responsible for securing low fuel consumption in flight. The efficient large diameter, slow speed propeller is particularly effective in this case, due to the small frontal area of the engine, together with the low power plant weight.

As can be seen in the accompanying picture of the cam engine mounted in a Waco 10 plane, the small engine behind the big propeller not only cuts down the head resistance of the power plant to a minimum, but also adds to the effective propulsive length of the propeller. It is found that not only is the fuel consumption in actual flight much less for this engine than would be expected from its maximum power output, but by using the large diameter slow speed propeller, the engine gives the plane much better take-off and climb characteristics than can be obtained with a high speed crank engine of equal or slightly greater power output.

The fuel consumption flight tests have not only established a gasoline economy that can be obtained with the cam engine, but have also reflected on the commercial reliability of this power plant and its suitability for long duration flights. The fact that the cam engine can take off a fairly great load, and with the low fuel consumption obtained in flight with this engine, show the possibilities of using the cam engine power plant in flight for the world's endurance record.

Facts and Figures on Colonel Lindbergh's Tour of the Nation

THE FOLLOWING information and figures on the tour of Col. Charles A. Lindbergh from his departure from New York City, July 20, to his return to New York City, Oct. 23, 1927, have been received from the Daniel Guggenheim Fund for the Promotion of Aeronautics, Inc.

1.	Hours flying time	260
2.	Number of miles flown	22,350
3.	Number of touch stops made	12
4.	Number of long stops made	69
5.	Total number of stops	82
6.	Number of times late	1

This delay was caused by extremely bad fog at Portland, Maine, last July. Colonel Lindbergh could have landed but probably not at the airport, which would have meant his leaving the "Spirit of St. Louis" unguarded in a strange field.

7	Number of times on time	81
8.	Number of messages dropped	102
9.	Number of speeches made	147
10	Number of dinners attended	32
11	Number of miles paraded	1,225
12.	Number of people who saw plane, parade, etc.	30,000,000

It is estimated 30 million people saw the plane and parades. This is a conservative estimate by the manager of the tour. Some newspapers have estimated that this figure should be not less than 50 million.

13	Number of states visited	30
14.	Number of State Capitols visited	23

During the tour Colonel Lindbergh was accompanied by a Department of Commerce plane carrying representatives of the Department and of the Daniel Guggenheim Fund. This plane was flown 20,350 mi., making a total for both planes of 42,700 mi.

During the tour both planes performed perfectly; there were no overhauls, no forced landings, and no delays of any kind from mechanical difficulties.

The two planes spent at least one night in each state of the Union and flew in all kinds of weather, including darkness. Both planes, in spite of this difficult terrain, kept to schedule although the terrain covered was at least 25 per cent mountainous and the tour did not follow regular airways.

Thursdays and Saturdays were rest days but Colonel Lindbergh elected to fly some of these days which is adequate proof that rumors during the tour of his physical exhaustion were erroneous. Incidentally, Colonel Lindbergh was examined twice during the tour, first in Chicago and then while at Little Rock, Ark. He passed both of these physical examinations with an A-1 rating. Army physicians at Little Rock, where Colonel Lindbergh was examined during his visit on Oct. 1 and 2, reported the results of the examination were the highest ever passed by any pilot examined there. A week's vacation was taken early in September by the order of John D. Ryan, a trustee of the Guggenheim Fund, at Butte, Mont.

Colonel Lindbergh made his tour of the United States in a Ryan monoplane with the original Wright "Whirlwind" engine in which he flew from San Diego to New York and New York to Paris. Lieut. Philip Love, who accompanied Colonel Lindbergh on the tour, flew a Fairchild four passenger cabin plane, also equipped with a Wright "Whirlwind" engine. Both planes were fitted with "Pioneer" instruments.

At Your Service

The first of a new fleet of passenger airplanes which started recently a passenger carrying service on regular daily schedule between Detroit and Cleveland. This Ford all-metal monoplane, as a part of the fleet with which the Stout Air Services, Inc., of Detroit, plans gradually to extend its lines until passenger airplane service will connect the Atlantic seaboard with the Pacific coast. This photograph was snapped from another plane of the fleet 2000 ft. in the air.

Reports Air Travel Increase

ACCORDING TO a report received from the Von Hoffmann Co., of St. Louis, Mo., although the number of pleasure riders has decreased with the arrival of cool weather, business along other lines is increasing. Business men of St. Louis are realizing the value of the airplane and recently two Ryan Broughams belonging to the Von Hoffmann Co. were used to transport 1800 copies of the St. Louis Post-Dispatch to Sedalia, Mo. The papers which contained in full a speech delivered that day by Senator Reed at the Democratic convention in Sedalia were transported the 200 mi. and placed on sale two and one half hours after coming off the press.

Another aerial trip conducted by the Von Hoffmann Co. was one in which a party of St. Louis business men were flown to Kansas City. As it was imperative that they be in Kansas City by ten o'clock on a certain morning and were unable to leave the night before they chartered one of the Von Hoffmann Ryan Broughams, took off at seven o'clock on the morning of their appointment and arrived in Kansas City in exactly two hours.

Fokker Special Universal is Powered With a Wasp Engine

THE ATLANTIC Aircraft Corp. recently completed a Fokker Special Universal powered with a Pratt & Whitney Wasp engine. The special monoplane was built for William H. Dunning of Fort Worth, Tex., to replace his former Fokker Universal that was used on the Nungesser-Coli expedition.

Front quarter view of the Fokker Special Universal powered with a Pratt & Whitney Wasp engine.

The Special Universal has a high speed of 140 m.p.h., with a total disposal load of 1695 lb. or 1,000 lb. pay load. The general performance figures as supplied by the manufacturer are as follows:

Speed at sea level	140 m.p.h.
Climb at sea level	1,250 r.p.m.
Service ceiling	19,000 ft.
Absolute ceiling	21,000 ft.
Landing speed	52 m.p.h.

Weights and loads:

With two tanks	
Pilot	180 lb.
Gasoline (78 gal.)	468 lb.
Oil (6 gal.)	47 lb.
Payload	1000 lb.
Total disposable load	1695 lb.
With four tanks	
Pilot	180 lb.
Gasoline (156 gal.)	935 lb.
Oil (9 gal.)	65 lb.
Payload	465 lb.
Total disposable load	1645 lb.

Air Associates, Inc., Opens New Show Room and Service Bureau

AS A MEANS of rendering service to the aeronautical industry, and those interested in its activities, in matters of window display, advertising, sales, general information, etc., a new aviation show room and service bureau of Air Associates, Inc. has been established at 535 Fifth Ave., New York City. This company which was organized a year ago with offices on 42nd St., N. Y. C., is headed by Haven B. Page. James B. Taylor, Jr., former Navy test pilot is vice president, Bernegaed Sweeney, former Navy flier is secretary and treasurer, and Louis W. Stotesbury former State Adjutant General is corporation counsel. Among the engineering and trade associates who contributed to the company's organization are Prof. Alexander Klemin, C. Fayette Taylor, Archibald Black, Kenneth M. Lane, Henry J. White and C. J. Paddon.

As a service to the industry Air Associates, Inc., is offering its windows and floor space at cooperative weekly and monthly rentals. The two lobby windows having an area of 88 sq. ft. command a daily inspection by the business clientele of the 33 story building in which the company is located.

In serving the public, Air Associates, Inc., books air passages to all parts of the country, contracts for aerial advertising, executes orders for aerial photography, distributes aircraft literature and publications, maintains an information bureau, etc.

Kirkham Racer Ready

AS AVIATION goes to press word is received that Lieut. "Al." Williams, U.S.N., has his Kirkham Packard racing plane afloat ready to try for the world's high speed record. The plane which was described in the Sept. 12 issue of AVIATION has been changed slightly in addition to the replacement of a landing gear for the pontoons. The plane has been streamlined still more in addition to a reduction in weight of approximately 1400 lb. It is now at Mitchel Field, L. I., and it is expected that within a short time that Lieutenant Williams will have it in the air in an effort to regain for the United States the world's airplane speed record.

It Can Be Done

The above picture was taken at Southampton, England, of the successful flight of the new "autogiro" piloted by Senor Don Cierva. It is stated that this plane is a great advance over any autogiro yet tested. According to a recent report this plane made a sustained flight of 50 min.

The Rohrbach Works Issues a Notice on Ocean Flight Rumor

THE FOLLOWING notice has been received by AVIATION from the Rohrbach Works, Germany.

"During the last weeks, there has been a good deal of talk, in both the native and foreign press, about an impending trans-Atlantic flight being prepared by the Rohrbach Works. This rumor must be said to be somewhat in advance of actual facts. The firm, of course, does not really deny its intrest in such undertaking, emphasizing however, that it would mean it to be a practical evidence of the sea-worthiness of its flying boats rather than a sporting event. The responsible people of the Rohrbach Works are perfectly aware of the fact, that serious difficulties have to be overcome in order to obtain the necessary service reliability and secure success. Therefore a final decision whether the proposed flight will at all be accomplished will not be vouchsafed until any possability of a failure seems entirely eliminated according to human judgment.

"At this very moment, several specimen of a new type of flying-boat, the 'Rohrbach-Robbe IIa' are undergoing their preliminary test flights at Knstrup Kopenhagen, where the firm entertains a sister-factory for assembly and test flights of all its flying-boats. There is no need to keep secret that the said boats have by far excelled the premisses of the design, in the said preliminary flights. The results of the minute and carefully prepared test and performance flights will be taken as critical items when the question is discussed, for what kind of task the machines will be best qualified.

"There has been no decision as to the pilot and crew of the boats, the more so, as most careful attention will be paid to their proving their qualification for an undertaking of so much importance.

"When the Rohrbach Works should actually decide to accomplish a long-distance flight of some kind, it would, by all means do so entirely on its own account and resources, without being influenced by the weather conditions of the prevailing season."

Establishes Aviation School

ARTHUR G. ZELLER, founder and for the past 17 years president and general manager of the Michigan State Automobile School, announces the establishment of the Michigan State Aviation School, Detroit, Mich., and enrollment of the first class in the course of practical training in aerodynamics and aeronautics.

This first class includes students from several states and from as far away as the northwest of Canada and from South Africa.

A three months' ground course includes engine and plane design, construction and repairs. This ground course may be taken either with or without flying course.

The flying course includes sufficient flying instruction in standard, modern planes to enable the student to solo. The solo is guaranteed to all students and is given without the posting of a bond. Students are qualified to pass Department of Commerce examinations.

Aerial navigation and photography are included in this course. The course has the endorsement of E. A. (Eddie) Stinson, president of the Stinson Aircraft Corp., and also of other aviation authorities. The instruction is given in both day and evening classes except in the flying.

The new Michigan State Aviation School under the management of Mr. Zeller, is affiliated with the old established Michigan State Automobile School and the ground course is given in its building at 3729 Woodward Ave., Detroit. The flying instruction is given at the Burns Airport on Plymouth Road near Telegraph Road, close to the city limits of Detroit.

Mr. Zeller has secured Guy Burns of the Burns Flyers to supervise his aviation school. Mr. Burns has been flying since the war and has trained hundreds of men to fly. He is considered one of the best aviators in the Detroit district and his vast experience in training men makes him exceptionally well qualified to take charge of this new course.

At Sundown

Picture of the U.S.S. Arkansas taken on the southern drill grounds off the coast of Virginia at the close of a day's maneuvers in conjuction with other craft of the U. S. Navy. Note the Loening Amphibian poised on the catapult ready to take the air. Every battleship in the U. S. Navy is equipped with one of these planes.

A Triple-A Airport

THE TERM "airport", according to the Air Commerce Act of 1926, means any locality either of water or land which is adapted for the landing and take-off of aircraft, or a place used regularly for receiving and discharging passengers or cargo by air.

The basic requirements for a certificated airport, as laid down by Commerce regulations, includes a suitable field, well drained, with at least two landing strips 100 or more feet wide crossing or converging at angles of not less than 45 degrees, free from obstructions, situated near a good highway leading to the nearest town, equipped with a wind indicator and markers and provision for fuel, communications transportation and personnel.

Landing fields receiving a triple "A" rating must have, in addition to the facilities named in the basic requirements, one or more hangars, repair facilities, a waiting and rest room, restaurant, sleeping quarters for at least three persons in addition to field personnel, fire fighting and first aid equipment, ground signal devices, weather service, register of arriving and departing aircraft; have at least 2,500 ft. of unobstructed landing area in all directions, and be equipped with the latest night flying facilities including an airport beacon, boundary lights, flood lights, signal lights, ceiling projector, hangar flood lights, an illuminated wind direction indicator, and other apparatus.

N.A.A. Changes Address

THE NATIONAL Aeronautic Association of U. S. A. announces that it has moved its offices from 1623 H Street N. W., Washington, D. C., to a new location in The Barr Building, 910 Seventeenth Street, N. W., Washington, D. C.

German Aircraft Firm Builds Commercial Transport Plane

THE ALBATROS Flugzeugwerke, Berlin, Germany, recently completed a very interesting commercial transport plane designed to carry one pilot and five passengers with luggage, or 1000 lb. of pay load. It was designed primarily as a newspaper carrier for the service of the Hamburger Fremdenblatt in service from that city to the North Sea bathing beaches. It has an endurance of four hours and a cruising speed of 95.3 m.p.h. with full load and a high speed of 100.1 m.p.h., with a landing speed of 52.8 m.p.h.

The L 72c or Albatros Flugzeugmuster is of all metal construction with wings built up of duralumin box spars and welded steel ribs. The internal bracing is of double steel

Front quarter view of the Albatros Flugzeugmuster

wires, while the external bracing is double in the plane of each spar. "N" struts are used for interplane bracing. The wings are covered with fabric.

The fuselage has a welded tubular steel frame with the forward part of the structure built up into a Warren truss, while the rear is braced with steel wire. The nose of the fuselage including engine mouth is detachable. It is a flat sheet plate casing. The outside of the fuselage is covered with fabric.

Behind the fire wall is a semi-open cabin for the pilots with an entrance at the side. At the side of the pilot seat is a space for the observer or navigator. In front of the navigator's space is provision for the installation of radial apparatus.

Cabin Floor Area of 17 Sq. Ft.

The main cabin is closed having a floor area of 17 sq. ft. One of the double seats is removable with an opening of 1½ ft. by 2 ft. for the purpose of dropping newspapers through an aperture under the seat. Against the forward wall of the cabin is a folding seat for two more passengers. At each side are two windows giving ample vision and ventilation. There is only one door for the main cabin.

The horizontal tail surfaces are adjustable for flight. It will interest you to note that there is a balanced rudder with no vertical fin. The ailerons are on both upper and lower wings. The undercarriage of the Albatros construction is of the through axle type with the combination rubber and oleo shock absorber. The tail skid is rubber in compression.

The complete power plant including engine, radiator, fire well, oil tank, fire extinguisher, engine control and engine instruments is removable as a unit. The engine mouth is so designed that it can use BMW IV Junkers L-5 or the BMW V engine with very little change. In the center section of the upper wing are two fuel tanks containing 845 gal. of gasoline making the Albatros capable of a sustained flight for four hours. The following performance figures were made before the Deutsche Versuchsanstalt fuer Luftfahrt and are guaranteed with a four per cent. deduction with regard to speed and an increase of ten per cent. with regard to climb. The following specifications were also submitted by the manufacturer:

Span	42.7 ft.
Length	6 ft.
Height	1 8 ft.
Wing area	479 sq. ft.
Weight empty (including water)	2814 lb.
Disposal load	1,64 lb.
Full load	4278 lb.
High speed	100 m.p.h.
Cruising speed	95.3 m.p.h.
Landing speed	52 8 m.p.h.
Climb to 1 km (3281 ft.)	7 min.
Climb to 2 km (6562 ft.)	17 min.
Climb to 3 km (9843 ft.)	40 7 min.
Absolute ceiling	10,680 ft.

Marshall Flying School Buys Training Field at Marshall, Mo.

THE MARSHALL Flying School of Marshall, Mo., has just bought an 80 acre tract of land for the Marshall Flying School, according to a statement of Derek White, general manager of the Marshall School. This new tract will be used for training students and is an absolutely level, four way field, with two runways, one 2700 ft. in length in the direction of the prevailing winds, and the other runway 1400 ft. long.

Three acres have been reserved and graded for automobile parking purposes and construction has started on two steel hangars to have capacities of 12 planes each. In addition a field office, a parts room and a gasoline and oil service station for both airplanes and motor cars is being built. The field is easily located from the air by observing the markings on the roof of the new Nicholas-Beazley Airplane Factory, with which the Marshall Flying School is affiliated, and which has a large arrow pointing to the field located just three miles from the plant.

In addition to acquiring this new field which has a 2700 ft. frontage on the main highway to Kansas City and St. Louis, the Marshall Flying School has just purchased ten new training planes for school purposes. The Marshall School in addition to giving complete flying instruction, conducts a ground school in Marshall which gives complete training in airplane building and repair, engine overhaul, rigging, instrument work, aerial navigation, meteorology and other subjects. This ground course qualifies students for a Department of Commerce license as airplane and engine mechanic.

To Teach Advanced Flying

THE VON Hoffmann Aircraft Co., St. Louis, Mo., announces that it is now offering a 15 hr. course in advanced flying instruction. This course is principally for those who have completed their 15 hr. primary course. The price for the 15 hr. advanced course is two thirds that charged for the primary course of the same number of hours. A student who completes both courses will have approximately 30 hr. of solo flying toward a pilot's license. The inauguration of this course is in line with the growing sentiment that pilots should have a more thorough training.

San Antonio Drug Co. Purchases Plane for Emergency Deliveries

A STRIKING illustration of one of the many uses to which the airplane can be put in the field of commerce is contained in a report that the San Antonio Drug Co., large wholesale house of San Antonio, Tex., has purchased an American Eagle biplane equipped with an OX engine for the purpose of making emergency deliveries of anti-toxins or other rush drug orders to its clients in San Antonio trade territory. The plane was sold by Edgar Tobin, San Antonio world war ace, who has formed the Edgar Tobin Aero Co as a subsidiary to the Edgar Tobin Motor Co., Pierce Arrow distributors.

The plane made its first trip recently when William Ochse, president of the San Antonio Drug Co., Wade H. Lewis, vice president, and Paul Vance, pilot, flew to Corpus Christi, Tex.,

The "Mercy Plane" and a group of San Antonio business men. Kneeling on the ground are Paul Vance, pilot, and William Ochse, president of the San Antonio Drug Co

to attend the convention of the Southwest Retail Druggists' Association. At the convention Mr. Ochse offered the plane to the retail druggists of the state for emergency deliveries at no extra cost. With the airplane service available, Mr. Ochse, pointed out, deliveries can be made to virtually any point within the company's southwest Texas territory within two hours. This is of especial importance in the treatment of rattlesnake bites or other cases in which rush deliveries of medicine are essential for the saving of human life, an occasion which arises frequently.

The plane has been christened the "Mercy Plane" and has the words "For the Service of Mankind" emblazoned on the sides of the fuselage, along with the "Fidelity First" trademark of the company. Prior to the purchase of the plane Mr. Ochse sent questionnaires to the various customers of his company throughout southwest Texas as to the availability of landing fields or open spaces that could be used in an emergency, together with other information concerning distances between towns and road connections. In towns where landing fields are not available, nor open fields that can be utilized for this purpose, small parachutes will be employed for dropping emergency supplies.

"So far as I have been able to learn this is the first plane employed for humanitarian purposes by any business firm in the United States," Mr. Ochse said. "It offers economy as well as service, for the Mercy Plane is operated at a cost of about three cents a mile. Aerial transportation has progressed to the point where it is practicable and logical as an up-to-date business service."

Since taking the agency for the American Eagle, less than a month ago, Edgar Tobin, who has a distinguished war record, has made four sales. One of these was to an out-of-town business firm and another to a local physician who will employ it for making emergency calls. Mr. Tobin has just contracted for the construction of a hangar at the Paul Vance flying field, also one of his aviation subsidiaries.

Mrs. Eliott-Lynn Pilots Avro Avian to Height of 19,200 Ft.

A COMMUNICATION received from Messrs. A. V. Roe & Co., Ltd., Manchester, England, states that Mrs. S. C. Eliott-Lynn, flying from the Avro Airdrome, at Woodford, Cheshire, on Saturday, Oct. 8, 1927, succeeded in attaining a height of approximately 19,200 ft. (uncorrected), in an Avro "Avian" two seater light plane. This is believed to constitute a world's record for this class of machine.

The "Avian" was fitted with a 90 hp. Alpha engine made by Messrs. A. V. Roe & Co., Ltd. Ordinary aviation fuel was used the whole of the time and Mrs. Lynn remarked on the splendid performance of the engine.

The attempt was to have been made on Friday, but owing to poor weather conditions was postponed. Mrs. R. R. Williams, wife of a member of the Lancashire Aero Club, very sportingly waited all day at Woodford to accompany Mrs. Lynn.

Mrs. Eliott Lynn (right) and Mr. Barrett who accompanied her as passenger on her record breaking flight

Mrs. Williams was to have been the passenger on Saturday, but as the weather conditions were good early in the morning and Mrs. Williams had not arrived at the Airdrome, Mrs. Eliott-Lynn took up a friend, Mr. Barrett. John F. Leeming, Chairman of the Lancashire Aero Club, who was acting as one of the officials of the International Aero Club, removed the barographs for official checking in the presence of two police witnesses.

Grover Loening Offers $5,000 Prize Fund for College Fliers

GROVER LOENING, president of the Loening Aeronautical Engineering Corp. of New York City, has established a prize fund of $5,000 for an annual award to the winners of an inter-collegiate flying contest to be held each year by students representing American colleges.

The purpose of the prize fund and his reasons for encouraging flying among college students were explained by Mr. Loening in a recent letter addressed to Porter H. Adams, president of the National Aeronautic Association, at Washington, D. C. That organization is the American representative of the International Federation Aeronautiques and as such exercises official jurisdiction over aerial contests and sporting events.

The text of the letter follows:

"Aviation has now progressed to a stage which warrants putting into effect a plan that I have had in mind for some time, namely to establish a prize fund for an intercollegiate flying contest, the contestants to be students in American institutions of college rank. Accordingly I have set aside the sum of $5,000 to be used for this purpose in the manner decided upon by a Committee to be appointed.

Will Stimulate College Flying

"I believe a flying contest among students will be a stimulus toward the development of aviation in our colleges where general interest is and always has been keen. In fact, it was the encouragement which I received from Dr. Nicholas Murray Butler and members of the faculty at Columbia during my early experiments that led me to seek a career in aviation. Since then I have followed with interest the increasing number of students who are taking up flying and aeronautical engineering in their academic courses. I am informed that the aviators in American colleges now number hundreds.

"I hope that the prize awards and competitive nature of the contest will provide the incentive for further progress, and this should result as a matter of course because of the intense enthusiasm for all intercollegiate sporting events.

"There is ample precedent to warrant this belief. An intercollegiate air meet was held at Mitchel Field, Long Island, on May 7, 1920. It was eminently successful. Students entered from Columbia, Yale, Harvard, Princeton, Lehigh, Cornell, Pennsylvania, Pittsburgh, Wesleyan, Williams and Rutgers. Though that event included races, alighting and aerobatic tests I am of the opinion that a college contest in future should avoid placing a premium on reckless flying of the sort which some racing involves. It might conceivably be a contest of skill, expert piloting and knowledge of one's individual machine. For example, a race to altitude would demand the utmost of a pilot and his airplane, at the same time keeping the entire performance within sight of the spectators.

"I shall be pleased to work out further details with you and the Contest Committee of the National Aeronautic Association at your convenience."

A Change of Address

STOUT AIR Services, Inc., announces a change of address from 2-267 General Motors Bldg., Detroit, Mich., to P. O. Box 86, Dearborn, Mich. The change was occasioned by moving into the offices at the new passenger depot, Ford Airport, Dearborn, and thus bringing together in one building the company's administration, operation and traffic divisions.

From Overseas

Left to right in front are Wing Comdr. T. G. Hetherington, C.B.E., air attache of the British Embassy, Under Secretary of Air Sir Philip Sassoon, who is now touring the country and Sir Esme Howard, British Ambassador who presented the British air official at the White House recently.

Makes Coast to Coast Flight

IN A communication received from the Kinner Airplane and Motor Corp., of Glendale, Calif., details are given of a recent trip made by W. B. Kinner, the company's president, from Glendale to Boston, Mass., in a Kinner Airster powered with the Kinner KE3 five cylinder radial air cooled engine.

A total of 34 flying hours were required in which to make the trip and the route followed was from Glendale to Las Vegas, Salt Lake, across Omaha to Chicago, on to Cleveland, Buffalo and Albany and thence to Boston. According to Mr. Kinner the gasoline consumption was 15 mi. per gal. and the total oil consumption was only five quarts. He carried 675 lb., and was accompanied by Harris Roake as mechanic and relief pilot. The records of the flight, which was made in the form of a plans delivery, show that the cost did not exceed three cents per mile.

T. L. Ford Elected Vice President

W. C. STETTINIUS, president, American Hammered Piston Ring Co., of Baltimore, Md., announces the election of T. Latimer Ford as vice president. Mr. Ford has been connected with the American Hammered Piston Ring Co. for many years, having been with the company at the time its plant was located in Newark, N. J.

For a number of years Mr. Ford was assistant secretary and treasurer of the company and for the past four or five years has had charge of the Pacific Coast territory. In addition to such executive duties as are required by his position, he will have charge of Automotive Replacement Sales. Mr. Ford's headquarters will be at the main office in Baltimore.

Side Slips

By ROBERT R. OSBORN

Mr. R. H. J., who has turned out to be one of our best attention callers, calls our attention to another aeronautical accident which he thinks is every bit as miraculous as the one which occurred to the parachute jumper who fell 2200 feet with his unopened parachute, sustaining slight injuries as noted herein a few weeks ago. The clipping sent in by R. H. J. reads as follows—

"The biplane Wanderer piloted by Capt. Frederick A. Giles, British airman, crashed here today shortly after resuming its flight from Detroit to New Zealand. Giles was only slightly injured.

Giles jumped twenty feet to the ground as the accident happened but the plane, traveling fast headed into a deep ditch. The flier declared his only injury was a bruised left arm. The plane was not damaged except the lower left wing, left wheel and propeller, Giles said. The motor was undamaged."

The reporter who turned in this gem should have noted that the aviator was extremely lucky to have escaped with so few injuries. In all of our experience, we have hardly known anyone who, having jumped from an airplane moving fast at twenty feet, did not bruise both elbows.

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In response to the inquiry we broadcast recently, for the potential inventor who wanted to know "What is the greatest weight that any airplane has ever lifted or failed to lift?" R. H. J. says he has first hand information concerning an airplane which failed to lift one hundred and three-four tons. This certainly illustrates how rapidly progress is made in this airplane business. The latest information we had indicated that the greatest weight an airplane had failed to lift was fifty tons, and we might have so misinformed the inventor, if we had not fortunately printed his inquiry in the column.

By unanimous vote the committee has decided to award this week's Flint Praise Prize to the newspaper which printed an item recently about "Charles A. Lindbergh, an aviator."

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Our trained corps of investigators are still looking into the matter but their reports so far, state that almost all of that very loud laugh you heard recently, was caused by the announcement that bootlegging by air had been broken up by the government.

• • • •

The same article on bootlegging by air stated that "No better means has been afforded government enforcement agents in the locating of stills than the airplane". As this item will probably be widely circulated, the commercial plane manufacturing companies had better prepare for an unprecedented rush of orders.

• • • •

The newspaper editors must look forward with a great deal of anticipation to the proposed race around the world next year between British and German dirigibles. Think of the dissension and fights there can be in flying crews as huge as these will be!

The projects, if successful, will be a great strain on the popular song writers, as they will be faced with the problem of writing a song of praise and what-not about [illegible] at a hundred or so.

AIRPORTS AND AIRWAYS

Springfield, Mass.

By Charles Hanson Gale

Considerable agitation has been promoted by Chambers of Commerce and the New England council recently in behalf of the aircraft industry. These organizations have been strenuously attempting to arouse the manufacturers of this section of the country to the opportunities offered by the aircraft field for expansion of existing plants along new lines and for the development of new plants to meet the aircraft market demand.

Statistics drawn up by the New England council, which serves all of New England states in an advisory way, indicated that practically nothing was being done in aircraft or accessory manufacturing here except in comparatively isolated cases where supplies were manufactured for the industry by existing mills. The generally high grade mechanical skill of the New England states has caused the council to urge that it be directed into the new channels wherever possible so that the loss sustained by the withdrawal of the automotive interests on account of lack of foresight, might not be repeated relative to aircraft.

Springfield has been discovered to be a large contributor in the aircraft industry through the Baush Machine Tool Company of this city.

The Baush company makes many engine and tubing parts as well as sheet forms for use on the Ford all-metal planes. The company also makes the famous Curtiss Reed propellers and ships them to the Curtiss plant for finishing.

Three new Swallows arrived here recently for the Springfield Airlines, Inc. The planes were expected some time before but manufacturing delays prevented earlier delivery. They will be shipped later to Dunn Field for assembling and testing by Harry Hermann, the president and chief pilot. An American Eagle bought some time ago by Harry and which had failed to put in an appearance was located by him in a field near Cleveland where it had been forced down by engine trouble while being ferried east. Harry decided that the repairs would take too long so he had the plane shipped the rest of the way by freight. Harry also has a Pheasant plane, for which his company is the local agent, coming from the Pacific coast. This is a new plane for this section and its performance is being watched with interest.

The Springfield School of Aeronautics opened late in October with an open house and a smoker at its quarters. All those interested in aeronautics in the city were invited and a program of speakers on aviation topics was arranged. Lieut. Albert Glode, a former Army pilot with considerable experience over the lines in France, is chief instructor of the school and has set up a course which is claimed to be as thorough as any civilian school in New England. Lieutenant Glode will specialize this winter on ground school work al-

though the entire course includes flying instruction, qualifying the student eventually for a transport pilot license. The flying instruction will be given in cooperation with flying schools already in operation here.

The ground school recently opened by Lieut. Elmo Hall has been booming. Twenty-five regular students have been attending Hall's classes and he has had to put in extra time on individual lessons. There has been a lot of enthusiasm on the part of the students and the class has made excellent progress, he states. A number have already applied for the next class which will start about the first of December.

Lieutenant Hall has had considerable experience in the operation of a ground school through his work as an instructor in the Army at several fields during the war and later at the University of California where he conducted a ground school under the auspices of the university extension department. His school is regarded as a valuable addition to the aeronautical activity which has sprung up in this city in the last six months.

An airplane was never seen here up until May except as an occasional visitor and today there are two busy flying fields in operation, two ground schools in the city, another company already organized by local interests with headquarters for the present at Hartford and several others rumored in process of formation. The city has already seen its first air pageant and the interest in aviation has been running high all summer and fall. The first plane to leave the ground at Dunn Field where the Springfield Airlines began to operate in June started a fever of interest in aviation which has lessened but little in the succeeding months. Springfield was backward in getting started but the progress made this year which has also included the organization of the Flying Club of Springfield and considerable agitation for a municipal airport, promises that next year will be epoch making in local flying history.

A local devotee of the art and sport of model airplane building and flying has been found in the person of Ernest A. Whalen of Longmeadow. He has followed the hobby for years starting in Tennessee some 15 years ago. The fact that most of his flights and about all of his experiments have been made in the seclusion of isolated fields near here has delayed his recognition as a model flier of considerable experience. Interest in model planes among the boys of Longmeadow is said to have been aroused by Mr. Whalen's example.

Pittsburgh, Pa.

By Ray A. Tucker

The annual meeting of the Aero Club of Pittsburgh was held recently, following a dinner at the Hotel Henry. The newly elected officers are as follows:

Robert E. Dake, president; Robert A. Laedlein, first vice-president; John A. Fife, second vice-president; John P. Morris, third vice-president; Halsey R. Bazley, secretary; Edward Thomson, treasurer. Members of the Board of Governors are: Louis T. Barry, Raymond M. Marher, Raymond A. Tucker; John J. Feery, Ewing W. Day, Jr.

Mr. Marher, who has just retired after serving two years as president, was attended a hearty vote of thanks by the members for his untiring and splendid efforts in behalf of aeronautics in this vicinity and for the club. Mr. Marher is the designer of the proposed 200 ft. Langley beacon, which will soon be erected at the point of intersection where the Allegheny and Monongahela Rivers merge to form the Ohio. This beacon will be used to point out Pittsburgh to night pilots of the future.

Mr. Dake, the new president, flew the Aero Club's entry, a Waco-Ten, in the New York to Spokane Derby. He holds

a reserve commission as first lieutenant in the Army Air Corps, and is operations officer in the 324th Observation Squadron of the 99th Reserve Division.

John P. Morris, the local Eaglerock distributor, recently delivered three new planes, at Rodgers Field, to the following new owners: Robert Fox, George Outland, Charles Carroll. Messrs. Fox and Outland recently graduated from the Morris Flying School, which Mr. Morris also operates.

William H. Emery, Jr., of Bradford, Pa., who won fifth prize, with a Travel Air, in the Class "B" event, of the New York to Spokane Derby, is a member of the Aero Club of Pittsburgh and occasionally operates from Rodgers Field, the Pittsburgh airport.

Since the recent arrival at Mayers Field, Bridgeville, the "Pride of Pittsburgh", a new Ryan monoplane, owned by the Mayer Aircraft Corporation, has been in constant use, hiking advertising contracts and carrying passengers.

Wichita, Kansas

By H. E. Beverland

The Wichita Aircraft Parts Company, recently organized, has received its charter of incorporation from the state charter board.

Two principal enterprises will be undertaken by the new concern. The first will be a supply house for airplane parts and appliances. The second will be the manufacture and distribution of airplane engines, which will be known as the Wichita Blue Streak. It was designed by Julius Dusevoir, a Frenchman, and developed on the west coast, is a radial, air-cooled, four-cylinder engine.

Edgar L. Boyle of Oakland, Cal., and Roy Hutchinson, of the west coast state, were responsible for establishment of the new concern in Wichita. Julius Dusevoir, who is expected here shortly, will supervise the manufacture and development of a new airplane engine he invented and patented.

New mechanical adjustments and a minor change in the wing of the new model monoplane recently developed here by T. C. Geselle for commercial use gave the plane a speed of 130 m.p.h. when L. L. Lewis, test pilot, took it into the air for a half hour flight.

Lloyd Stearman, president of the Stearman Aircraft Company, announces the first planes to be built by his new Wichita factory will be mail planes for the Varney Aircraft Company, Los Angeles, Cal. They will be standard model, powered with Wright Whirlwind engines.

The Swallow Airplane Co. has signed a contract with W. A. Williams of Milwaukee, Wis., representative of the Milwaukee Airlines, Inc., for 10 airplanes.

Major Carroll Cone, president of the Arkansas Aircraft Co., has placed his second order for a standard Swallow airplane to be painted maroon. The plane will be ready for delivery [illegible].

Earl Ovington, one of the pioneers of aviation and formerly president of the Curtiss Airplane Corporation of Atlantic City, was in Wichita recently to receive delivery of an OX-5 biplane purchased from the Travel Air factory. He flew the plane to his home in Santa Barbara, Cal.

Madison, Wis.

The purchase of 290 acres of land to be used as an airport, four and one-half miles north of Madison, for $35,380 has been approved by the common council. Development of the field is the only thing remaining for the city before Madison will have an airport which experts say will be second to none in the country.

An initial payment of $380 was made immediately and the remainder will be affected through land contracts from the Joseph Boyd Co., for $35,380. This amount with 6 per

cent interest will ha paid in semi-annual installments over a period nf ten years with the city reserving the right to complete purchase any time it desires.

The council also approved the resolution designating the special council airport committee as a regular standing committee of the common council. This committee will take charge of the airport and all matters pertaining to operation and maintenance.

With the purchase of an airport for the city, airmail and passenger service east and west from Madison will start on Armistice Day, Nov 11, according to Col L. H Brittin, vice president and general manager of the Northwest Airways, Inc. The arrival of the first airmail plane will be made a civic event, according to W. A. Devine, postmaster.

Winston-Salem, N. C.

By Robert Carmichael, Jr.

So far as Winston-Salem is concerned, the tour of Col Charles A. Lindbergh has served its purpose, and proved a blessing. His tour is responsible for this city obtaining one nf the most modern municipal airports in the South, and his actual visit here is responsible for an action that assures the permanency of the airport.

When the announcement first went forth, in July, that Colonel Lindbergh was to tour the country, and that Winston-Salem was included in the itinerary, local citizens awoke to the fact that this city had no adequate field to receive him. Action was started on the day the announcement was made, and three days later the community was advised that a modern airport was to be provided.

Forsyth County provided a site of 100 acres, less than two miles from the center of the city. A. Clint Miller, local capitalist, gave approximately $20,000 to pay for the development and equipment of the field, and county forces were provided for the grading and other work.

As a result of these actions, Colonel Lindbergh found, upon his arrival here, a complete airport. The "Spirit of St. Louis" landed upon a field that has few equals in this part of the country. It was stored that night in a modern concrete and steel hangar. Nearby was an attractive rest room. At night, the field can be amply illuminated by an equipment of border lights, beacon lights and flood lights. In fact, everything necessary is provided, even to the marker, the 100-foot circle of crushed stones, in the center of the runways. And now the field is being planted in grass, assuring the best of conditions in all weather.

Most important of all was the announcement made at the Lindbergh banquet, that R. E. Lasater, a prominent citizen, had purchased Miller Municipal Airport from the county and had donated it to the Winston-Salem Foundation, to be used perpetually as an airport. The purchase was consummated the day Colonel Lindbergh landed, and its announcement proved one of the features of the banquet. To Colonel Lindbergh was accorded credit for the fact that Winston-Salem has taken its place in line with other progressive cities in providing accommodations for aircraft.

The Winston Salem Foundation is an organization that handles bequests for community and public benefit. Under its supervision, one-half of the proceeds from operation or lease of the airport will be devoted to the Leo Caldwell Fund for the assistance of worthy boys and girls in completing their education. The other half will ha allotted to a fund for instruction in flying and the promotion of aeronautics—a practical application nf the ideals of the Daniel Guggenheim Fund for the Promotion of Aeronautics, and for which Colonel Lindbergh has made his tour.

Of interest to fliers and others is the announcement that Miller Municipal Airport will ha formally opened, with an

ar meet, w... has the next few weeks. Valuable trophies are to be awar... d winners in various contests. The program will include a... ficient variety of events to provide classes for all pilots ... planes. It is planned to stage an all-day meet on a Satu... y, closing with a dinner in the evening.

Pilots a... others interested are invited to communicate with William ... Ritter, secretary nf Miller Municipal Airport Commissio...

Within ... next few days, a fleet of planes will be sent to the local ... l by the Reynolds Airways, Incorporated, which holds a le... on tha airport for ten years. The planes will be used n... ommercial flying and instruction work.

Shelly C... arles, former Winston-Salemite and now selling Eaglerock ... Richmond, Va., flew in for the Lindbergh celebration er..., then preceded Colonel Lindbergh to Richmond. He was f... ing the Eaglerock in which he captured second place in th... race from New York to Spokane in September.

Charles ... Myers, also former Winston-Salem citizen, and winner of ... rst place in the transcontinental race for Class B planes, wa... in the city a few days ago. He flew a Waco to a field near Winston-Salem, landing there because he had not been advised the local airport was ready. He expects to return here within a short time. Shelly Charles also is planning to return in November.

Fargo, N. D.

By H. A. Lundbergh

C. A. Trump, of the Trump Airways nf Minneapolis, has been in Fargo a number of times to discuss the possibility of opening a mail and passenger line from the Twin Cities to Fargo with the idea of extending this route to Winnepeg at a later date.

The governor of North Dakota was present at the dedication of the Hector Airport during the letter part of October and among the visiting planes at the field during the exercises was the Stanohnd.

The Hanson Auto Tractor School recently opened a flying training school with E. A. Canfield as the instructor.

It has been decided that markers will not ha placed on the field until spring and at that time lights, telephone, gasoline and oil service will also be installed.

V. L. Roberts, who is the best known pilot in this territory, maintains a flying school, in which a Hisso Standard and the Monocoupe are used as training planes. His activities also include a taxi service and photography.

Two of the buildings in town are marked 'Fargo' with the usual arrow pointing to the field and is visible from a 3000 ft. altitude.

Rochester, N. Y.

By Joseph F... Farren

Aviation ... activities in Rochester during the last few weeks have been ... t a standstill because nf cold and otherwise unfavorable ... eather. Several of the local pilots are planning to take-off ... or the sunny South, among them Bill Dunlop and Otto Eas... on.

The cit... officials have abandoned their plans to build a hangar on ... he municipal aviation field until early next spring, when a $... 000 hangar will he constructed and other equipment adde... lo the field.

The In... rial Airways, Inc., announced recently that its $20,000 s... k is nearly disposed of and plans are now under way to p... hase airplanes for early spring activities. This company ... ans to run an airline to Montreal, Toronto, Boston, and C... veland, making Rochester its terminus.

The W... ern and New York Airways, Inc., recently appointed E... M. Williams manager of Rouse-Partridge Field, which the ... mpany operates. The appointment of Williams

was made to fill the vacancy caused by Merrill ... Riddick, president and manager of the company, who acco... panied the Marsh South American Expedition

Roy Du Val, formerly of Shoremont Field, has transferred his activities to another field located three miles ... th of the city's business section The field contains sixty a... es of land and is equipped with a gasoline pump, hangar tool room, rest room and lunch stand There are no dangerous obstacles surrounding the field

The most active aviation organization in Roch... ter at the present time is the Rochester Flying Club Th... club has launched an extensive program that brings its mem... rs before many organizations in aviation talks The club ... is a program calling for two speakers each month durin... the winter and spring to appear before civic organizations The first of these talks was given by E L Bark, president of the Imperial Airways, recently before the Cornell Club of Rochester. The next will be given before Georgetown Club

The Flying Club lost its president, Dr Joseph B Loder who was married recently at McKeesport, Pa. Dr Loder resigned from the office, which is being filled by Gordon Taylor, until the annual election the third week in November

H. Ralph Badger, of Buffalo, New York State governor of the National Aeronautic Association, recently addressed the Rochester Association of Credit Men, on commercial aviation.

Colorado, Tex.

By D. D. Tidwell

The members of the Colorado Flying Club recently purchased an Air-King plane, from the National Airways System, of Lomax, Ill, and obtained the state agency of the same. They are operating a flying school and doing passenger carrying, air freight transportation, and a general flying business at the Colorado Airport, which is located two and a half miles east of the City of Colorado, on the Bankhead Highway. The field has a hangar for three planes, a wind-cone mounted on a 100 ft. iron pipe, a 300 ft. circle marker, with a 30 ft arrow pointing toward the prevailing wind, oil and gasoline facilities and an attendant on the field day and night. The words "Colorado Airport" loom in big letters on the hangar roof and an automobile is at the service of visiting pilots wishing to go to town

The field is 1600 ft square and has a Class C rating All pilots flying cross-country are invited to make use of the field

Officers of the club are R. H Barber, president, J C Fish, vice-president, Dewey D. Tidwell, secretary and treasurer, and Grady A Cole, chief pilot and field manager Mr. Cole has had 1600 hours in the air, having been in the Naval flying service during the World War

Cincinnati, Ohio

By C. C. Planck

A branch of the W. F. W. Club has been estab... ished at the Embry-Riddle Flying school here

For the benfit of the uninitated, the W F W cl... is composed of those impatient purchasers of Waco airpl... nes who have been forced by the rush of orders to wait for ... eir Wacos. The home nest of the waiters is in the Loll... hotel at Troy, Ohio, where Wacos are made, and the activ... of the members center around the factory and flying fi... of the Advance Aircraft Corporation, and the rooms of cert... n members of the club who have a predilection for poker

Students at the Embry-Riddle Company Flyin... School, having ordered their planes at the time of their e... ollment, often find themselves still waiting for delivery w... n their course is completed. At the school, they adopt th... mannerisms and habits of members of the home club

That means they arrive regularly at the field ... d ask, "What about my plane?" Upon receiving the sam... answer

...hey received the day before they loaf the rest of the day ... at Troy, th... members wander through the factory, trying to persuade so... incautious official or workman to admit that ... plane on ... floor is theirs

Frequent ... orries of excitement arise with the arrival of ... ne plane ... the field Then the club adjourns in a body ... inspect ... newcomer The visit ended, the club returns ... the hate... its, and goes back to the factory. Evenings ... the fi... and factory are closed, finds the ubiquitous game of po... in full swing

Where th... are branch clubs, as at Cincinnati, and where ... member... p is too small for a good game of poker, the ... members ... ler into the ground school classes of the school, ... hear ... in the things they have already learned

Expul... from the club is not a celebration, except for ... man wh... flies away in his new plane Other members ... and ha... ournfully wishing their fellow-member "happy landings", a... l then adjourn to the factory where workmen walk wearily around them.

Atlanta, Ga.

By John K Ottley, Jr.

Installation of lighting equipment at Candler Field has started under the supervision of city electrician R. C Turner

The equipment, which cost, not installed, approximately $15,000, includes a 30,000,000 candle power B B T flood lamp, a 2,000,000 candle power revolving beacon, boundary lights, and flood lights for hangars.

The flood lamp and revolving beacon are to be fixed on a lamp house now being constructed at the north end of the field.

City authorities are concentrating all hangars and other buildings at the north end of the field as a safety measure and in order to give the pilots the benefit of an increased east and west runway

The hangar of Douglas Davis, Waco agent, and the rest house, both located on the west side of the field, are being moved to the group at the northern end. The hangar is making its 800 ft. journey on rollers, while the rest house has been dismantled

Water, sewerage, light and telephone connections are being provided for the new group of hangars which includes the recently completed hangar of Pitcairn Aviation, Inc, holders of the Atlanta New York air mail contract, and a new hangar being constructed by Beeler Blevins.

The first Wright Whirlwind jobs to be put in local commercial service were flown to the field recently They are a five-place Ryan Brougham, and a Wright powered Waco 10 The Ryan will be operated by Beeler Blevins and the Waco by Doug Davis.

Milwaukee, Wis.

By H. C. Brunner

In order to stimulate air mail and aviation in Milwaukee, 23 more m... bers were added to the personnel of the air service commi... e of the Association of Commerce by Philip A. Koehring ... esident, increasing the board to 35

The appointments were made by Mr Koehring after a group of citizens, led by Col Peter F Piasecki, postmaster, had advoc... d a larger and more representative air committee for the cit... The committee heretofore was composed of 12 members o... the Association of Commerce, and since its organization ... ore than two years ago, has taken part in obtaining fi... major aviation goals in the city These include a ... ate lake f... ont airport and a county airport and obtaining air mail ... ice for the city

Among ... e new members are William F Pabst of the Hamilton Metalplane Co, Elling O Weeks of the Weeks

Aircraft Co., Hans A. Feldman aviation committee of the Cudworth Post, American Legion, and Mayo Daniel H Hoan

Stuart F Aner, Milwaukee aviation enthusiast and August U. Pahst, a student at the Harvard law school have been made licensed pilots according to an announcement made by the department of commerce recently.

New Orleans, La.

By Ted R. Lauzza

Asserting that all the essentials of a Class A airport are available at the City Park annex, J. T Eastwood, an official of the Sewerage and Water Board of the city, recently made public a detailed map and report outlining the need of this airport facility.

Mr Eastwood's plan includes the utilization of waste land in City Park extension He suggests that this be pumped in and filled from the lake bottom in the same manner that the levee board is now constructing its $27,000,000 lakefront development.

The field thus provided could, through the connection of Lake Pontchartrain and Bayou St. John, be adapted to both land and seaplanes, he says It would also be ideal in point of location, being by airline only five minutes from Canal Street, the principal thoroughfare of the city.

The detailed plan, as proved by Mr Eastwood, provides for the erection of hangars, machine shops, hangar facilities, hotels, street car lines, train services and other conveniences necessary to a modern airport.

The field, as planned, would be of the circular type, permitting planes to take off in any direction under any wind conditions The plan, Mr Eastwood said, will be presented by Commissioner of Public Property Klorer for action by the city commission council at an early date.

After fighting headwinds and rain storms most of the way the United Fruit Co. Fokker plane "Tela" landed at Callende Field recently after making stops at Washington and Montgomery, Ala. Head winds and severe rain storms made the "Tela" turn back when half the distance between Montgomery and Mobile had been traversed. Lieuts. S B Morgan official United Fruit pilot, and A. P. Flagg, U S N., navigator, brought the plane down in Montgomery.

Despite adverse weather conditions they took off the next morning at 9 o'clock. High winds cut their average speed to about 60 m.p.h.

Coming down at New Orleans airport, a large delegation of officials of the United Fruit Company was awaiting them.

A luncheon was given in honor of Lieutenants Flagg and Morgan by the Louisiana Aeronautical Association

The "Tela" was dismantled in New Orleans and placed on shipboard to be transported to Honduras where it will do service for the United Fruit Company

Three seaplanes flew from the Pensacola Naval Station for the celebration of Naval Day in New Orleans, Oct 27

Chairmen for the celebration were Capt. Frederick Israel, Lieut. Comdr. Preston Marshall, Lieut. Comdr. W Neville, Lieut. Comdr. J B Linde, Lieut. Neville Levy, Ensigns Straahy Drum and Herbert Benton, Cal Charles Snuffin, Lieut. A B. Walters, Lieut. John W. Rogers and Lieut. G. B. Carter.

Oklahoma City, Okla.

By Ernest W. Fair

A six plane hangar is being built at the municipal field now It is on the east side of the field, opposite the N.A.T hangar It is being financed by Virgil Browne, manager of the Coca-Cola bottling works here and is to be managed by Robert H Tarkutton, who has been conducting a small plane service there. Three planes will be stored in it additional

to the demonstration and commercial work planes that Tarhutton owns He will make repairs for visitors. He also will handle supplies for the Eaglerock, having a local sales franchise

With the completion of the lighting there has been added a thousand miles of airways to those of the national system.

A six passenger Stinson-Detroiter monoplane has been purchased by five business men here who have organized the Oklahoma Aero Club of Oklahoma City. These men are T E. Braniff of the Braniff Investment Co, who will use the plane to visit a string of investment houses in Houston, San Antonio Amarillo, Tulsa and Okmulgee; L H Prichard of the Anderson-Prichard Oil Corporation who will use it to visit oil fields in Texas; Harvey P. Everest, wholesale magazine dealer Virgil Browne and Paul R. Braniff. It will be devoted exclusively to the use of these men, they have announced The club was formed somewhat on the plans of the Wire Yard Club of Detroit. The plane was brought here by Paul Braniff and William Mora of the Stinson-Detroiter Company They flew the 1030 mi in 11 hr., 15 min

An air delivery service for the collecting of samples of cotton in Oklahoma has been installed by James E. Brooks, Inc., of Memphis, cotton brokers, who visited here recently.

Wendell Bailey, 1214 North Oklahoma, is making plans for the organization of an aero club for Oklahoma City youths. Bailey won the local model airplane contest and placed third in the National contest at Memphis

Ground school instruction for members of the Oklahoma City Aero Club has been started with Burrell Tibbs as instructor The club has also extended a recent invitation to women to join their ranks. C G Severin is president and George S. Suggs, vice-president

Local high schools and junior high schools are all organizing aero clubs The Capitol Hill High School, one of the largest, elected Hillburh Parsons president of their club

Mrs W R Marlin of Pawnee, president of the American Legion Ladies auxiliary, and Mrs. Floyd Doolen, Okemah, chairman of the auxiliary membership committee, are the only two women who reserved places in the air circus that the American Legion started from Oklahoma City Oct 21, as part of a membership campaign Ten to twelve planes were used in the circus, of which Glenn Condon of Tulsa was manager.

St. Louis, Mo.

The Scenic Airways, Inc., with J Parker Van Zandt as general manager, is soon to open an airline over the Grand Canyon of Arizona Plans are to carry passengers on short sight-seeing trips and later to extend the service across the canyon with side trips to the Painted Desert, Rainbow Bridge and other points of interest

A landing field, hangars and an office building near the south rim of the canyon are being constructed by B Russell Shaw & Co.

Springfield, Ill.

Springfield is the first stop going north from St. Louis on the 278 mile contract air mail route operated by the Robertson Aircraft Co between St. Louis and Chicago

The municipal aero field, which is under the direction of the chamber of commerce, is located about five miles from town and has been in use about two years.

This stop-down and hop-off point is equipped with lights for night flying and there are about five planes on the field regularly with the mail planes coming and going daily.

Student instruction, aerial taxi and the selling of the Waco, for which there is a local agency, are some of the activities that keep the men here busy.

UNITED STATES AIR FORCES

Bombing Planes in Comparison Tests

Some interesting comparison tests were recently made between the new LB-5 and the NBS-1 under the direction of Lieut. Odas Moon, Air Corps, who is attached to the 20th Bombardment Squadron, Langley Field, Va., for particular work. A climb test was performed with Lieut. Moon flying the LB-5 and Lieut. A. H. Johnson and Lieut. Ward J. Davies each flying an NBS-1. The planes took off in formation and climbed with maximum throttle for 25 min. At the end of that time the LB-5 had attained an altitude of 8,700 ft., the Martins being at 8,400 and 8,300 ft. respectively. A speed test then followed, and the LB outdistanced its competitors. Several days later all three LB-5s assigned to the 20th Bombardment Squadron were taken on a cross-country flight to Mitchel Field, with Lieuts. Moon, Vickery and Melville at the controls. Extra pilots and crew chiefs were ferried to Middletown and Bristol, the two pilots and crew chiefs ferrying back an NBS-1 and C-1 from Middletown and a new LB-5 from Bristol. After leaving these pilots at their stops, the planes proceeded to Mitchel Field without incident, and subsequently returned to Langley Field.

First Pursuit Group to Train

With the termination of reserve training at Selfridge Field, Mt. Clemens, Mich., the First Pursuit Group will journey to Oscoda, Mich., in three echelons of approximately two weeks duration each, for annual gunnery and bombing practice. Arrangements are now being made to put Camp Skeel in the best possible shape, but nothing definite is known at this time as to the date of opening or the amount of personnel involved.

Photograph Maine From Air

Within a period of nine flying days and in a total of 13 flights, eighteen quadrangles, approximating 3800 sq. ms. of territory in the extreme northeastern portion of Maine, were photographed by an aerial photographic detachment consisting of Lieut. Herbert K. Baisley, pilot and Tech. Sergt. Stelle, photographer, of the Army Air Corps.

The base of operations was established on a hay field, four miles south of the town of Van Buren, Me., a very pretty piece of country, according to Lieutenant Baisley. The field was hilly and liberally sprinkled with rock piles. It was necessary to clear a space sufficient for landing and taking off.

Lieutenant Baisley stated that there is a better landing field at Presque Isle and in the vicinity of Caribou. The eastern portion of the tract photographed is cultivated and rolling, many farms and roads being observed. The western portion, however, is practically impassable in the summer time, virtually a wilderness.

The fliers performed all the necessary work incident to servicing their plane, a DH photographic plane. No difficulty was experienced in making the necessary repairs, all being of a minor nature, and keeping the plane in flying trim. All necessary supplies were sent up from Mitchel Field, N. Y. In the absence of shelter for the plane it was necessary to stake it to the ground, and a piece of canvas was borrowed from a farmer to cover the engine.

It required 34½ actual flying hours to complete the photographic mission. On the days flying operations were conducted, the fliers worked until about ten o'clock at night. A number of ground parties were observed working on the particular territory which was photographed, and in subsequent conversation with these Government surveyors they expressed the view that the aerial photographs would prove of great value to them. The Geological Survey has quite an extensive surveying program for the State of Maine.

Index to Advertisers

Where to Fly

Where to Fly

CONTINUED

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One L-6 Standard J-1, ready to fly away. A bargain. Must sell $700. One Type-L Eastman aerial camera in perfect condition $75.00. Lakeside Garage, 1012 Old Fort St., Fort Wayne, Ind.

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For Sale, or trade on new production airplane, new Longren airplane with Anzani 6 cylinder radial, one set uncovered wings, tail group and spare wheels for Longren. One new Curtiss C-6 motor and one new 40 hp., Hall Scott. Dewey Miller, 1922 Dowaing, Denver, Colo.

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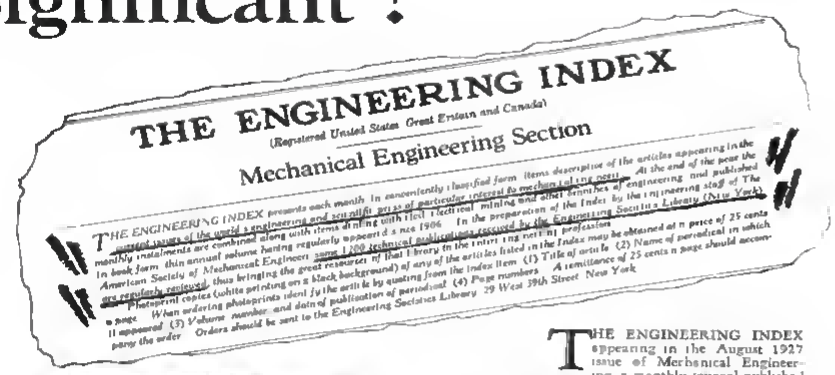

AIRPLANE PROPELLERS

Design. Some Notes on the Design of Airscrews. F. S. Barnwell. Instn. Aeronautical Engrs.—Jl. vol. 1, no. 5, May 1927, pp. 56–77 and (discussion) 77–83, 6 figs. Deals with simple blade-element theory, means for determining effect of body on tractor air propeller and effect of air propeller on body metal propellers.

Geared Down. Geared Down Propellers and Efficiency of Commercial Aeroplanes. R. M. Mock. Aviation, vol. 23, no. 22, May 30, 1927, pp. 1137–1140. Better performance attained in spite of increased weight.

Metal. Metal Propeller Development. E. G. McCauley. Aviation, vol. 22, no. 22, May 30, 1927, pp. 1137–1139 and 1144, 10 figs. Extensive test work responsible for present efficiency of metal propellers for aircraft use, detachable blade, composition of aluminum alloy.

Section. Characteristics of Propeller Sections Tested in the Variable Density Wind Tunnel. E. N. Jacobs. Nat. Advisory Committee for Aeronautics—Report no. 258, 1927, 16 pp., 18 figs. Results obtained besides providing data for design of propellers, should be of special interest because of opportunity afforded for study of scale effect on family of airfoils of like having different thickness ratios.

AIRPLANES

American. The Aircraft Industry at Boiling Field. Aviation, vol. 22, no. 20, May 16, 1927, pp. 1033–1039, 7 figs. 65 aircraft manufacturers exhibit at all American aircraft display; review of exhibits indicates progressive state of industry, aircraft manufacturers.

American Eagle. The American Eagle Commercial Plane. Aviation, vol. 22, no. 23, June 6, 1927, p. 1240, 2 figs. Outstanding design that involves several individual and distinct features which reduce maintenance; direct steel tubing, silvon control is positive control using pulleys and accompanying friction being wholly eliminated; tail skid may be removed to re-wrap shock cord by removing two bolts which are easily accessible.

Bach. The Bach C-S-1 Cabin Plane. Aviation, vol. 22, no. 22, May 30, 1927, p. 1135. Three-passenger enclosed-cabin machine designed for private owner; simplicity and ruggedness are features; powered by 120 hp. inger Rhoon radial air-cooled engine.

Brillauer. The History of the Columbus Aviation, vol. 22, no. 26, June 27, 1927, pp. 1430–1431, 2 figs. Facts and figures on construction performance and records of the New York to Columbus plane.

Bonney Seagull. Bird Like Design Features Bonney Seagull. Aviation, vol. 22, no. 24, June 13, 1927, pp. 1290–1291, 3 figs. By incorporating many aerodynamic characteristics of those of gull L. W. Bonney expects to give his plane similar performance; independent movement of wing sections, entire wing of unusual dual side by side control.

Canadian Industry. The Canadian Aircraft Industry. Aeroplane, vol. 32, no. 19, May 11, 1927, pp. 534–543, 544, 548 and 548, 5 figs. Types of planes developed in Canada.

Chance Vought. Chance Vought Produces Many Firsts. High Standard of Quality and Performance. Aviation, vol. 22, no. 24, June 13, 1927, pp. 1278–1279. From original VE-7 model to new Corsair which holds four world's records, soundness of design has been governing factor. Corsair is designed around

THE ENGINEERING INDEX appearing in the August 1927 issue of Mechanical Engineering, a monthly journal published by the American Society of Mechanical Engineers, described 56 articles pertaining to aircraft, aeronautics etc. The articles were from "the current issues of world's engineering and scientific press." Below is an analysis of their origin—

AVIATION	24
Other American aeronautical publications	0
Foreign	20
Bulletins of N.A.C.A., etc.	5
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